SOAP

LIBRARY

SANITARY CHEMICALS

PRIORITIES

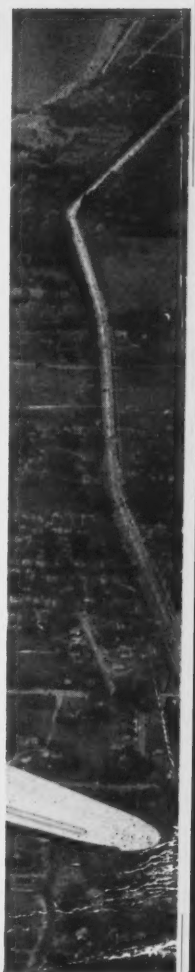
AMERICAN commercial aviation today occupies its prior position because its leaders have utilized every resource to solve their problems.

And many of the soapmakers of America are maintaining priority in their respective fields through the scientific assistance of Ungerer & Co. in the solution of their odor problems.

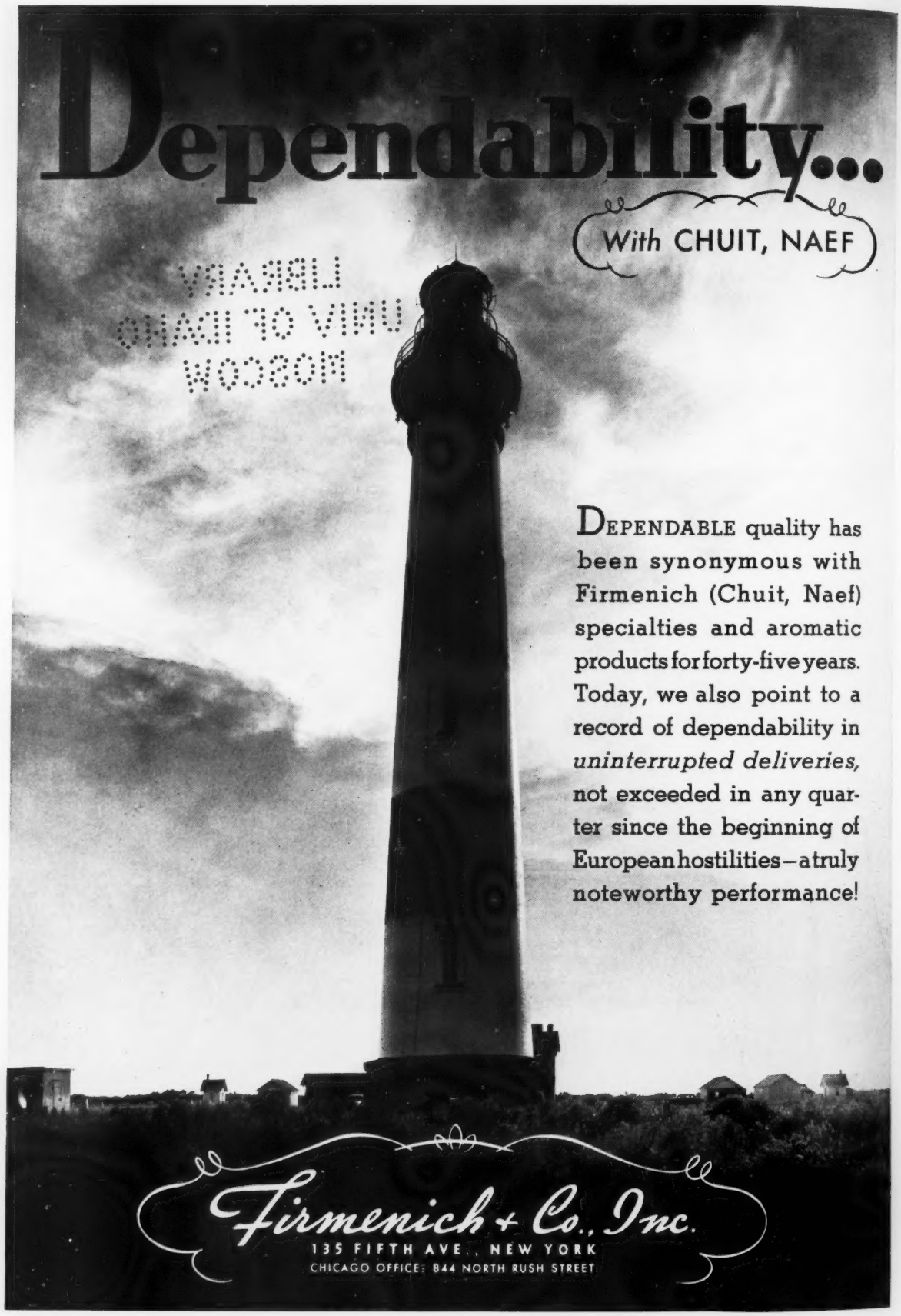
We thoughtfully suggest that you use the full facilities of Ungerer & Co. to maintain the priority you desire.

UNGERER & CO.

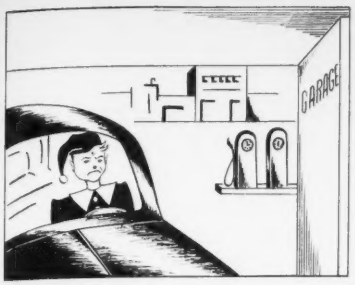
13-15 West 20th St., N. Y.



May 1941


Dependability...
With CHUIT, NAEF
LIBRARY
UNIV OF IDAHO
MOSCOW
DEPENDABLE quality has been synonymous with Firmenich (Chuit, Naef) specialties and aromatic products for forty-five years. Today, we also point to a record of dependability in *uninterrupted deliveries,* not exceeded in any quarter since the beginning of European hostilities—a truly noteworthy performance!
Firmenich + Co., Inc.
135 FIFTH AVE., NEW YORK
CHICAGO OFFICE: 844 NORTH RUSH STREET

Adventures of FULDY



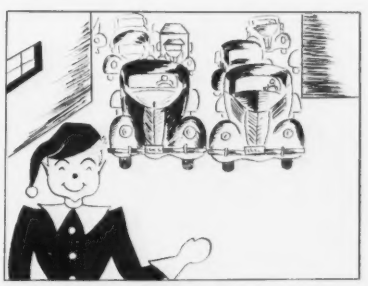
SHAW! I DIDN'T WANT TO COME HERE, but I had to. The other garage, where I usually have my car washed, was so busy they turned me away. There's a good reason why people flock there, too; it's because—

HEY! THERE'S BEEN SOME CHANGES made! Yes, sir, as true as you're alive that's a Fuld Brothers System Soap Drum! Wonder whether it contains Repeat, Fleet, Simplex, Motive, Darby or Darstem Oil Soaps. Oh well, it doesn't make any difference.

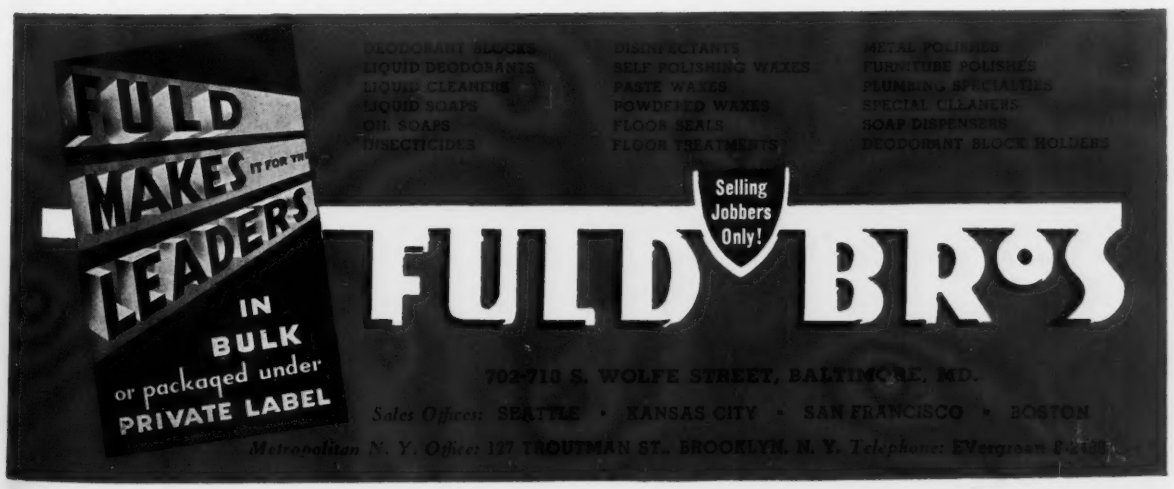
INCIDENTALLY, THAT OTHER GARAGE uses Fuld Brothers System Soaps, too. Boy, how cars shine when they wash 'em! *Dirt and this* Soap just hate each other. And is it easy to use? Just put some water in the top of the drum like this.

THEN WHILE YOU WAIT, PRESTO! The "System" automatically makes the right uniform solution. From each gallon (approximately 8 lbs.) of this concentrated soap solution comes 35 to 40 gallons of the best cleaning solution you ever saw. It sure wages "all-out-war" on dirt, yet it's "neutral" to everything else.

MADE OF FINE VEGETABLE OILS, FULD system soaps never attack even the most delicate skin. So not only use it on cars, but also on interior woodwork or furniture, also on tile and composition floors—with absolute safety. But when I get this bucket full, just see what happens to dirt.



WELL, HERE'S YOUR ANSWER, FOLKS! With Fuld Brothers System Base Soap, packed in economical Thrif-T Self-Mixer drums, any garage can turn 'em out shining. And remember—shining cars make happy motorists who come back and back and back again. That's just one reason why it pays to be a Fuld Jobber.



New Synthetic Gum Jellies with COLLORESIN

A Water Soluble Methyl Cellulose

Dimethyl Ether of Cellulose, a white fibrous solid which dissolves in water.

Resistant to the action of alkalies and dilute acids giving a clear colorless solution.

Colloresin is of interest to the manufacturer of cosmetics and pharmaceuticals as a replacement for natural gums and in the manufacture of Liquid Dentifrices, Tooth Pastes, Creams, Soapless Shampoos, Hair Grooms, Wave Sets, Brushless Shaving Creams, etc.

Tentative formulas for the above are available as well as instructions as to methods of its employment.

Available in seven viscosities.

GL 4C

Non Toxic Emulsifying, Detergent, Foaming, Wetting Agent

A protein-amino acid condensate exceptionally fine for Liquid Dentifrices, Soapless Shampoos, Brushless Shaving Creams, etc.

GL 4C may be readily used with Colloresin in the manufacture of these products.

Requests for samples on your firm's letterhead will be promptly answered.

Protect your source of supply by using the above products manufactured in the U. S. A.

Aromatics Division

GENERAL DRUG COMPANY

644 PACIFIC ST., BROOKLYN, N. Y.
TRANSPORTATION BLDG., LOS ANGELES

9 S. CLINTON ST., CHICAGO
1019 ELLIOTT ST., W., WINDSOR, ONT.

Volume XVII Number 5

SOAP and SANITARY CHEMICALS

Reg. U. S. Pat. Office

MAY
1941

SANITARY Products Section, which forms a part of every issue of SOAP, begins on page 71.

MEMBER AUDIT BUREAU OF CIRCULATIONS

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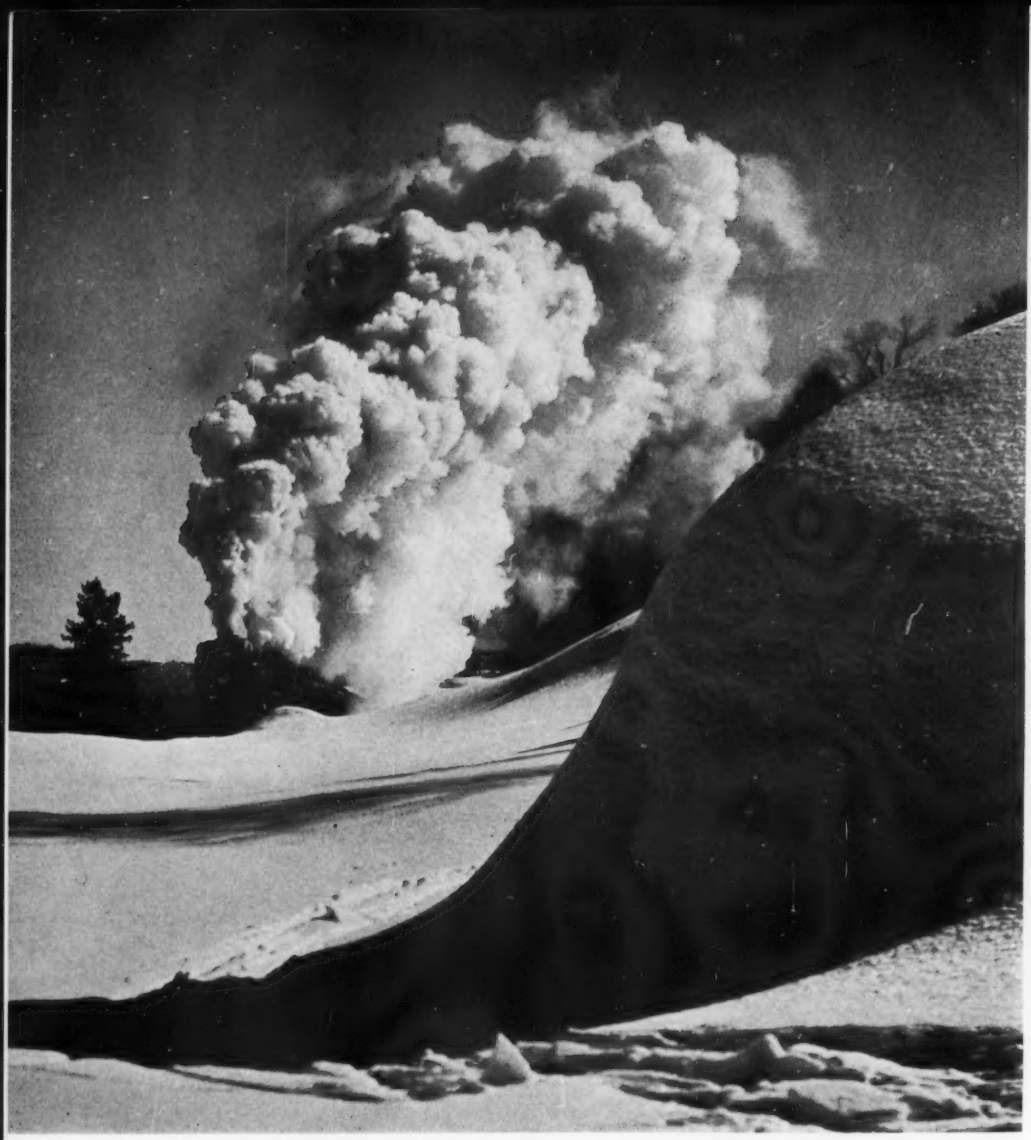


Snowbound

In March of 1940, a seasoned salesman was snowbound in Boston when all traffic by rail and road was paralyzed. Due in New York, his predicament enforced his first plane trip. For years he had traveled by train and while he comfortably slept in Pullmans, aeronautical engineers were contriving better design and safety in air transportation. When his faithful train failed, the modern plane was ready to do the job, and well.

In times like these, when regular supplies of essential oils and raw materials have failed, the call for synthetics and substitutes, is raised. And the answer, "ready", is heard from the ranking firms in our industry who have, through the less hectic years, kept their research laboratories awake to new methods, new processes and new products.

Bergamot, Lavender, Geranium, Ylang, Orris and many other materials, are practically unobtainable, but synthetics and truly excellent synthetics, are ready to jump in and fill the gap just as the airlines were ready when rails were snowbound.

If your stocks are low, check with van Ameringen-Haebler on these exceptional synthetics.

VAN AMERINGEN-HAEBLER, INC.
315 FOURTH AVE NEW YORK CITY

FOR A BETTER WAX JOB ON EVERY TYPE OF FLOOR

Sell WATERPROOF *Super Wax*

By pricing SUPER-WAX at the level of popular priced self-polishing liquid waxes . . . HYSAN has achieved one of the boldest merchandising successes in floor maintenance history.

SUPER-WAX is made from the choicest ingredients money can buy. Its rich wax content is the *prime* of No. 1 Yellow Carnauba—there is none finer. Its *higher gloss and less slip* is built in—product of HYSAN'S new formula-discovery that *multiplies* the wax reflecting surfaces, and gives our chemists a lustre reserve to build up features formerly sacrificed when high gloss was desired.

SUPER-WAX is hard and durable, yet it won't powder under traffic. It is self healing. It won't soap, smear or milk when scrubbed. Yet it is quickly removed when a new treatment is required. SUPER-WAX is safe to walk on—and *safe* for floors—ALL FLOORS. It resists dirt instead of catching it.

SUPER-WAX is not a "ridge runner". Its spread and laying qualities are an eye opener wherever demonstrated. In side by side tests against the costliest waxes made, SUPER-WAX gets the call on quality alone—yet you can price it to meet your market's toughest competition. For proof send for 5 gal. trial pail at drum price quoted in your Hysan Catalog.
Money back guarantee.

CLEANERS • DISINFECTANTS • SOAPS • DEODORANTS • DEODORANT BLOCKS • INSECTICIDES • POLISHES • WAXES

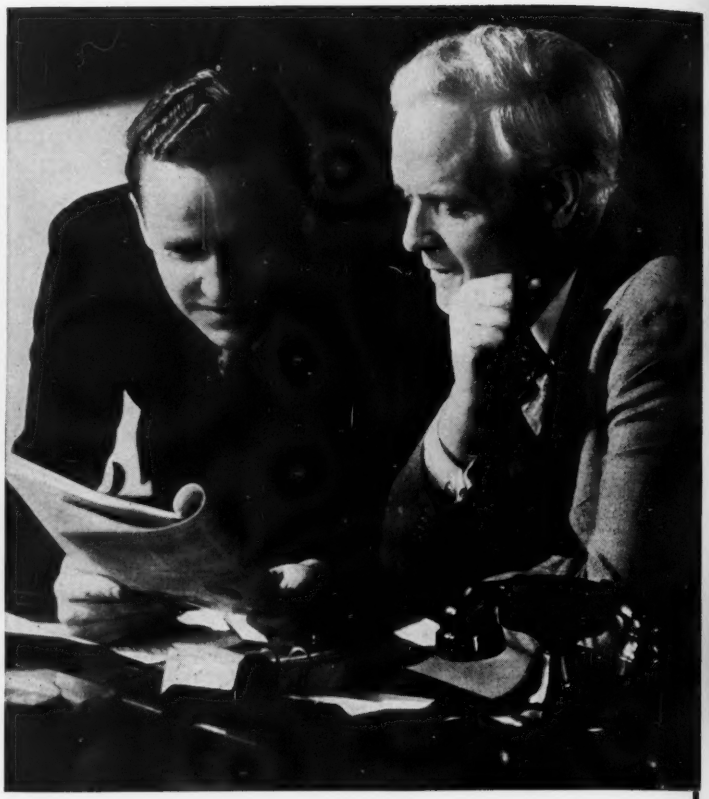
HYSAN
MANUFACTURING CHEMISTS

PROTECT YOUR LABEL WITH HYSAN QUALITY

Hysan Products Company
2560 Armitage Ave., Chicago
☐ Send 5 gal. pail SUPER-WAX.
☐ Send New Hysan Catalog.
Firm .....
Street .....
City ..... By .....
5/5/41

HYSAN PRODUCTS COMPANY • 2560 ARMITAGE AVENUE • CHICAGO, ILL.

STUDYING IMPROVEMENTS IN *Soap-Making?* YOU'LL NEED COLUMBIA LIQUID CAUSTIC!



PRACTICAL experience with new developments in soap-making makes one point especially clear. Only Caustic Soda of the utmost purity is suitable for most processes.

To meet these special needs, Columbia was already well prepared in advance—with Liquid Caustic of exceptional purity—and an entire fleet of newly designed tank cars that keep it pure in transit. In fact, for two full years, these unique Columbia cars have been delivering Columbia Liquid Caustic—both 50% and 73% grades—in perfect condition to meet the most exacting requirements of those who use it.

And this is a point it will pay any soap manufacturer to remember. All Columbia products benefit from the same care in manufacture and shipment that make our Liquid Caustic so suitable for the most exacting soap-making methods. It will pay you to standardize on Columbia Chemicals for your soap-making needs.

ESSENTIAL	• SODA ASH • CAUSTIC SODA • SODIUM BICARBONATE • SILENE
INDUSTRIAL	• LIQUID CHLORINE • CALCIUM CHLORIDE • HENNIG PURIFIER
CHEMICALS	• MODIFIED SODAS • CAUSTIC ASH • PHOSFLAKE • CALCENE

COLUMBIA
COLUMBIA CHEMICALS

PITTSBURGH PLATE GLASS COMPANY

Columbia Chemical Division

30 ROCKEFELLER PLAZA

NEW YORK, N.Y.

Chicago • Boston • St. Louis • Pittsburgh • Cincinnati • Cleveland • Minneapolis • Philadelphia • Charlotte

May we have two of your packages?

WE'RE ready to show you the remarkable improvement an Anchor Hocking glass container, with matched Anchor closure, can bring to your merchandising. In an Anchor Hocking "planned" package your product will have new shelf appeal, selling superiority over competitive products.

Our experience has proved over and over again that manufacturers changing to glass have found an immediate increase in consumer acceptance and goodwill, which of course means more sales and more profit. And today, changing to glass offers another important advantage: it is timely insurance against the possibility of package supply being restricted or interrupted.

Anchor Hocking's extensive variety of stock containers and closures assures a package that's precisely right for your product, both in appearance and practical usefulness. And our expert engineering and designing staff can give you valuable counsel on any problem concerning economical and efficient packing in glass.

THIS

IS OUR OFFER

Will you let us repack two of your packages . . . and give you full information and cost figures? We believe you will be agreeably surprised by the economy in cost . . . as well as the distinction in looks and convenience in use that an Anchor Hocking package will give your product. No obligation, of course.

ANCHOR HOCKING GLASS CAPS

ANCHOR HOCKING GLASS CORPORATION • LANCASTER, OHIO

EASY LESSON FOR SOAP-MAKERS!

BERGANELLA is but one of a number of exceptional products which the Felton Laboratories have successfully synthesized to replace many natural products no longer available.

Inquire about those which are of special interest to the soap manufacturer.

WRITE FOR A SAMPLE TODAY . . .

FELTON CHEMICAL CO.

599 Johnson Ave., Brooklyn, N. Y.

Manufacturers of Aromatic Chemicals, Natural Derivatives, Perfume Oils, Artificial Flower and Flavor Oils.

BRANCHES IN PRINCIPAL CITIES

The Peach Pack That Developed Mumps

The Story of a Packaging Problem

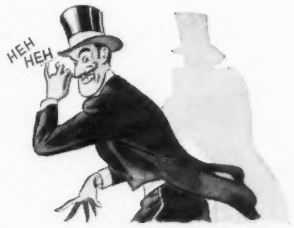
"GET THE BOSS DOWN HERE quick," shouted the warehouse foreman to his helper. "Tell him we got trouble with the peach pack and got it *bad!*"

When the boss of the cannery saw the peach pack, he took just one look, then grabbed the telephone and called American Can Company.

For he did have trouble—plenty! Some cans were bulged out at the ends, a most unusual situation caused by the unexpected development of hydrogen in the cans.

What caused the cans to bulge—made part of the peach pack develop mumps? It was our job at American Can Company to help find out. For a fault like this was mighty important and had to be fixed at once.

First, the scientists from our laboratories checked the canning process at the peach cannery. Nothing wrong there. Then, they went over our own manufacturing of the cans themselves. The work was flawless. Finally, they got down to the steel base plate, just as it came from the steel mills.



And there the villain in the story was uncovered!

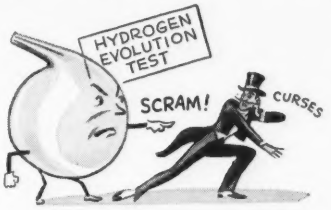
For these test-tube detectives found that the cans which bulged were made from steel which had a larger silicon content than the cans which gave no trouble.

And they also found that the cans with the larger silicon content *caused this unusual development of hydrogen* in the peach cans.*

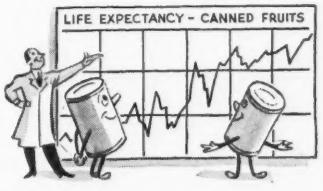
But just *finding* the trouble was not enough. Now, our scientists had to establish specifications for the chemical composition of the steel base for the tin plate.

Then, they had to devise a quick, practical method of predicting the performance of the tin plate made to these specifications.

And this they did. They invented a very simple method called the "hydrogen evolution test." Now, no peach pack develops mumps.

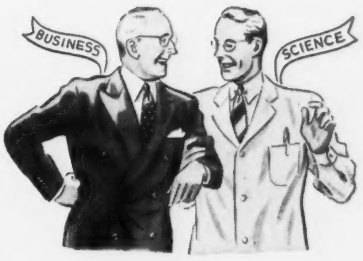


And like most new discoveries of merit, this test had effects on industry far beyond the immediate purpose for which the test was intended.



It enabled the entire canning industry to put more kinds of food in cans than ever before and actually to pack foods which had never been successfully packed before.

The hydrogen evolution test also raised the standards of tin plate and sped up the development of the new cold-rolled steel process.



To us, this story typifies how business and science can often go hand in hand and achieve many good results. It's also a fine example of the laboratory facilities which the customers of American Can Company have at their disposal.

*Later tests proved that phosphorus as well as other elements had an effect.

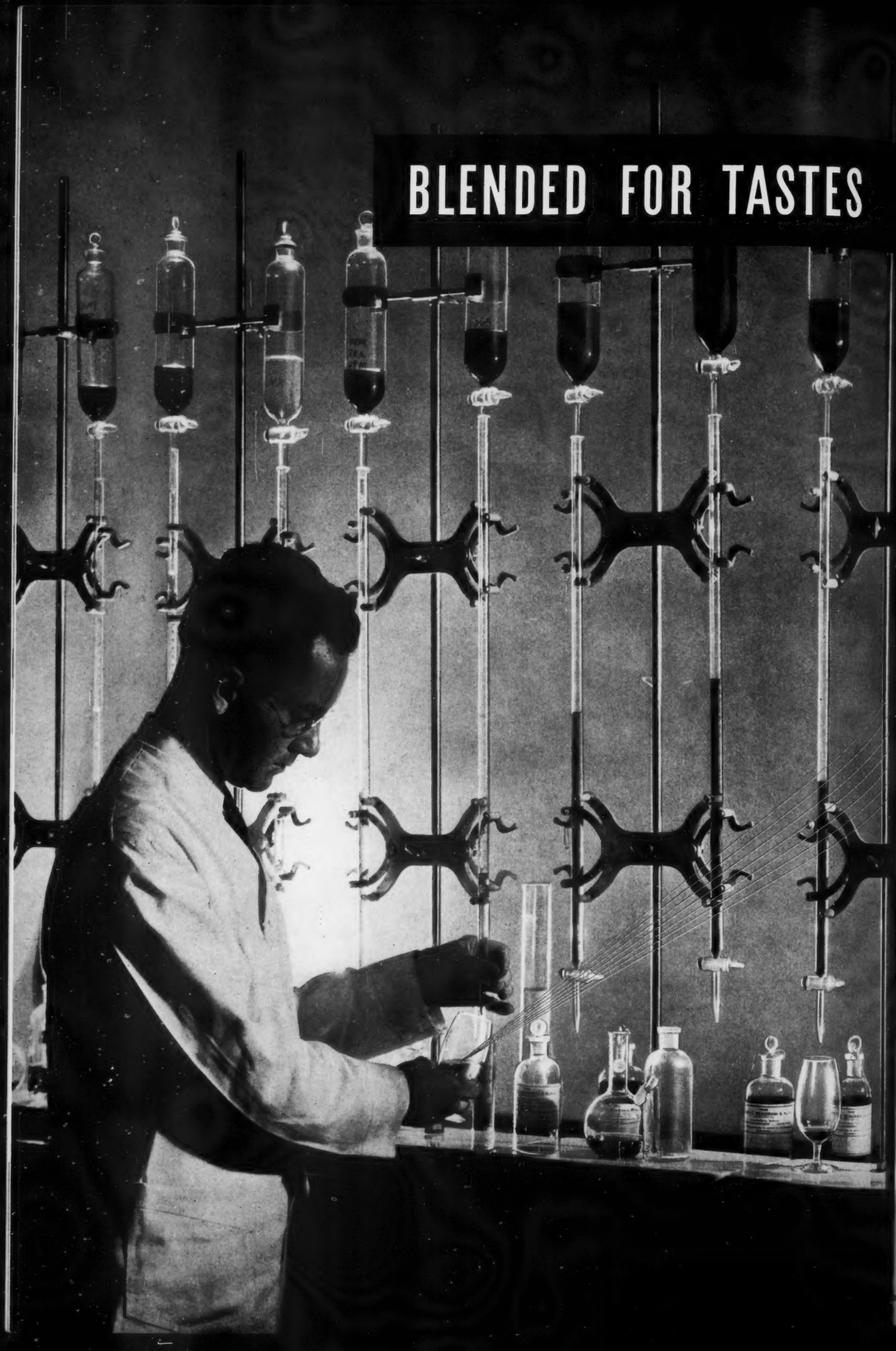
CANCO

Resources For Solving Packaging Problems at American Can

- 5 laboratories employing 134 people with college training, academic, or professional degrees in the pure, natural, or engineering sciences.
- 13 points from which customers' machinery is serviced . . . 6 points at which customers' machinery is built.
- 67 plants located strategically in the U. S., Canada, and Hawaii.
- A factory-trained sales staff who are specialists in many different types of industry.
- An executive personnel backed by a financial strength that is in itself a tangible business asset.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.


BLENDED FOR TASTES

OF DISCRIMINATION

THE BLENDING OF fine whiskeys into a product that pleases the most discriminating palate calls not only for long training and experience—it requires, also, a special talent on the part of the blender. In the same way the chemist, compounding perfume and cosmetic odors, relies not only on the knowledge gained from his specialized experience, but also on the instinctive ability that enables him to develop those odors which produce successful results.

Givaudan's staff possesses to a unique degree this combination of skill derived from training with an intuitive feeling for perfume materials. It is this combination that is responsible for Givaudan's success in creating new odors that meet the most discriminating taste in perfumes, toilet waters, powders, creams, lipsticks, soaps, and other cosmetic products. Many of the leading manufacturers of perfumes and cosmetics have found Givaudan's skill and knowledge of materials an important aid in creating products that demonstrate their merchandising value.

Whether you are planning a new specially prepared product – or adapting a complete line of cosmetics to seasonal changes or fashion trends – you can profit by this experience. Givaudan's chemists will gladly cooperate by offering suggestions on meeting specific problems.

New Odors, New Scents for Fly Sprays and Insecticides

Top-flight sales appeal for many household products in the field of insecticides and fly sprays has been obtained through the use of odors compounded in the Givaudan Laboratories.

The selection of the right odor for a *particular* product — one that will insure immediate and lasting consumer acceptance — is a service in which Givaudan has had long experience.

We will welcome the opportunity to suggest a fragrance that can give individuality to *your* product. If you will send us a sample of your unperfumed spray or insecticide we will be glad to make recommendations for an odor designed to suit the requirements of your product.

GIVAUDAN-DELAWANNA, INC.

330 WEST 42ND STREET • NEW YORK, N. Y.

...ph reproduced by courtesy of Seagram-Distillers Corporation

Let These Chemical Guide Posts Show You The Way to Important Savings with TSPP

THERE'S REAL MAGIC in this "mountain" of Tetra Sodium Pyrophosphate. And it's there because TSPP is a chemical of almost incredible versatility. Once a laboratory curiosity, its properties and uses are now being "explored" by industry with money-saving results.

So that those still unacquainted with TSPP may profit from its unusual properties and from applications already discovered, we offer the following guide posts to its use:

APPLICATIONS: The jobs that TSPP can help to do better, or for less cost, (or both) are found in countless industries. To name just a few: in soap manufacture; in commercial laundries; in wet finishing of cotton, rayon, silk and wool; in making mixed detergents; in machine dishwashing, cleaning of rugs, metals, and dairy equipment; and in the vitreous enamel industry for enamel slips and cover coats.

PROPERTIES: The ability of TSPP to serve in these varied applications lies in its unusual combination of properties. For example: TSPP will reduce the quantity of insoluble hardwater soaps formed by magnesium and calcium hardness—will keep iron compounds in water in a soluble or dispersed form — will act as an efficient suspending and dispersing agent for most inert and insoluble materials—and will give some "wetting" action, lowering surface tension of solutions and aiding in emulsification of oils and greases.

Other Facts About Du Pont TSPP

- Formula—$Na_4P_2O_7$
- Comes in either powdered or granular form.
- Free flowing.
- Mildly alkaline—pH 9.1—10.3.
- Readily soluble in hot or cold water and in distilled water as follows:

Water Temperature Fahrenheit	*Parts TSPP in 100 parts H_2O*	*Ounces TSPP per gal. H_2O*
68°	6.2	7.7
140°	21.8	24.0
212°	40.0	38.2

TECHNICAL SERVICE: In such brief space, only a glimpse of TSPP "magic" can be given. Nevertheless, if it has suggested the possibility of doing some job better, or more economically in your plant, we invite you to share in our knowledge of this versatile chemical. For information, or technical assistance, write or call: E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Dept., Wilmington, Del.

DU PONT
REG. U. S. PAT. OFF.

TETRA SODIUM PYROPHOSPHATE

Build 4 Business on Quality Lines . . .

4 Liquid Floor Soaps

TO MEET YOUR CUSTOMERS' DEMANDS

DAVIES-YOUNG PRODUCTS

4 FOR RUBBER FLOORS

The following Davies-Young Floor Soaps are approved by the Rubber Manufacturers' Association, Inc.:

BUCKEYE PLAIN LIQUID SCRUBBING SOAP

BUCKEYE SASSAFRAS LIQUID SCRUBBING SOAP

BUCKEYE WAX CLEANER

BUCKEYE SPECIAL RUBBER CLEANER

Liquid floor soaps (scrubbing soaps) are widely used today because of their ease of handling, immediate and complete solubility in water, and effective cleaning properties. The several Davies-Young soaps are each specifically compounded for certain types of floors. (Buildings having more than one type of flooring often require several different cleaners to maintain them properly and economically.) Build up your business by recommending and selling *the right cleaner for the right surface.*

MAIL TODAY FOR SAMPLES AND PRICES

The Davies-Young Soap Co.
Dayton, Ohio

Please mail samples and prices of your Liquid Scrubbing Soaps.

NAME_____

ADDRESS_____

CITY AND STATE_____

THE DAVIES-YOUNG SOAP CO., DAYTON, OHIO SOAPS FOR EVERY PURPOSE; FLOOR WAXES, SANITARY SUPPLIES

Copyright 1939, The Davies-Young Soap Co.

Norda

Scarcity of floral oils . . .

Present dwindling supplies of natural floral essences emphasize the value of high quality substitutes.

Synthetic floral essences can be used to replace the natural oils with full satisfaction and marked success in numerous products,—toilet soaps, shampoos, shaving creams, powders, creams, and many others.

In fact, in many products the newer synthetic floral essences are to be *preferred* for the manner in which they reproduce the true fragrance of the living flowers in the finished product,—not to mention uniformity of quality and odor fidelity, and their economy under present conditions.

Let us tell you more about these newer substitutes as an answer to the growing scarcity of natural floral oils.

NORDA Essential Oil and Chemical Co., Inc.

Chicago Office
325 W. Huron St.

Los Angeles Office
2800 E. 11th Street

St. Paul Office
253 E. 4th St.

Toronto Office
119 Adelaide St., W.

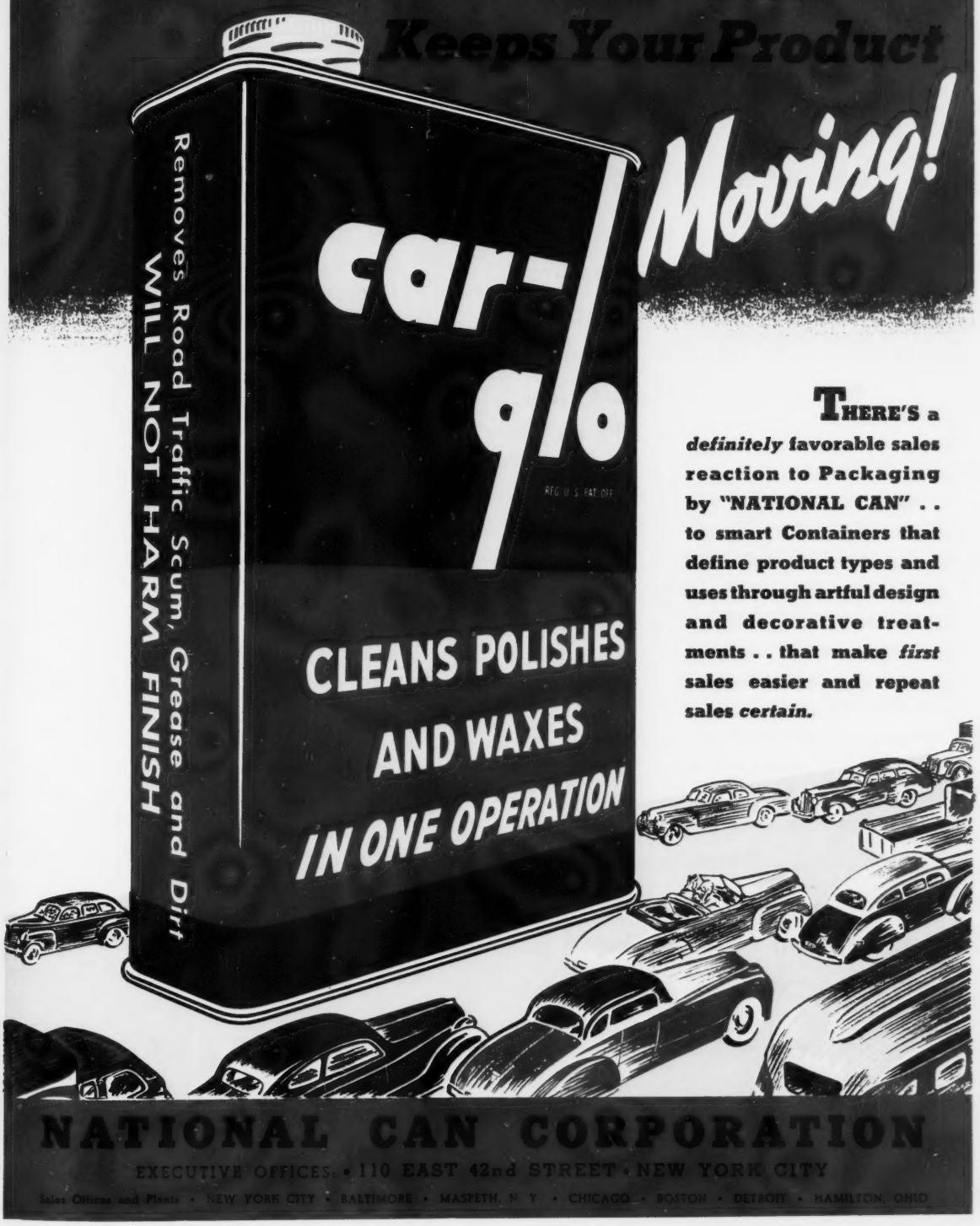
New York Office
601 West 26th St.

Montreal Office
135 Commissioners St., W.

In the Thickest Sales Traffic

"NATIONAL CAN"

Keeps Your Product Moving!



THERE'S a *definitely* favorable sales reaction to Packaging by "NATIONAL CAN" . . to smart Containers that define product types and uses through artful design and decorative treatments . . that make *first* sales easier and repeat sales *certain.*

NATIONAL CAN CORPORATION

EXECUTIVE OFFICES • 110 EAST 42nd STREET • NEW YORK CITY

Sales Offices and Plants • NEW YORK CITY • BALTIMORE • MASPETH, N. Y. • CHICAGO • BOSTON • DETROIT • HAMILTON, OHIO

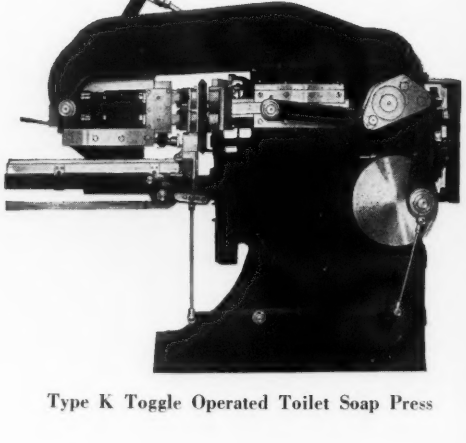
JONES

TOGGLE OPERATED

PRESSES

Save hundreds of dollars more per year than earlier models!

THEIR long toggle pressure makes the soap cohere so that particles do not stick to the dies. This makes long runs possible without stops for cleaning. Such stops on old model presses put the whole line out of production for more minutes per day than you realize without adding them up.



Type K Toggle Operated Toilet Soap Press

Again, dies which accumulate scrap, press only a few before the soap cakes begin to lose their finish and clean impression. If the dies are run too long before cleaning, many cakes will have to be remilled and pressed again. This costs money, but it costs more in loss of sales to neglect it.

Toggle Operated Presses insure higher production, prevent early depreciation, multiply by three the life of dies and conserve the nerves of workers by their noiseless, efficient operation.

Many successful soap makers are replacing old models with

JONES TOGGLE PRESSES

R. A. JONES & COMPANY, INC.

P. O. BOX 485 CINCINNATI, OHIO

AS THE EDITOR SEES IT

ONCE again we delve into the subject of soap production. This time, the starting point is the data on fat and oil consumption by soapers during 1940 as issued by the U. S. Bureau of the Census. These latest figures show that the factory consumption of fats by the soap industry was two per cent greater in 1940 than it was in 1939. But previously published figures showed a drop of four per cent in soap sales during 1940 as compared with 1939. So somewhere between the two, there is a difference of six per cent. This may be accounted for by an increase in soap plant inventories, or by a failure to include the production and sales of numerous small soapers or the soap sales of those not primarily in the soap business.

If we judge by fat consumption, 1940 was the largest year in the history of soap production, not excluding the banner year of 1939 when soap sales topped a figure of three-and-a-half billion pounds. Total oils and fats which went to the soap kettle in 1940, including all foots, were in excess of 1,869,700,000 pounds. In 1939, this figure was 1,830,900,000 pounds, according to the Bureau of the Census. In 1940, the percentage "take" by the soap industry of the total consumption of fats and oils by all industries was 39.5. In 1939, soapers used 38 per cent of the total fat consumption. In 1938, this figure was 37 per cent and in 1937 was 34 per cent, showing a steady rise over the past four years in the position of the soap industry as a fat consumer compared to edible and other industrial uses.

However these figures may be interpreted elsewhere, to us they give support to the contention that in spite of all influences to the contrary, there continues a steady long-term upward trend in total soap consumption. Predictions that soap consumption had reached its peak and would in future years show a decline due to numerous factors beyond the control of the soap industry, were made as far back as ten years ago. But, in our opinion, the effects of competing detergents and other factors will have to be far more revolutionary than they have been since 1920, to reverse this trend in soap consumption. From present indications, we are more inclined to believe that by 1950, in addition to a far wider use of the newer detergents, the United States will be a four-billion pound soap consumer!

THE purchase of war materials by the Government goes ahead at an unprecedented pace. Included in the program is, of course, the purchase of large quantities of soaps, the largest ever purchased by the Government. Potash soaps, olive castile soaps, and other specialties are being called for in tremendous amounts. These orders, coupled with the sharp rise in oil and fat prices, have brought about a condition of feverish excitement in the soap industry, the likes of which we have never seen. And the period within which these soaps must be manufactured and delivered is quite obviously adding to the confusion.

Now, inasmuch as some soap products are perishable, that is they will go rancid and deteriorate over a period of months, we wonder if purchases in such large quantities are too wise. Evidently, these soaps are be-

ing bought to be stored in warehouses ready for use when needed,—but will they be suitable for use when needed? Would it not be better to buy in lesser quantities and spread deliveries over a longer period of months? Not only would this remove the pressure from certain branches of the soap industry, but it would give greater assurance against deterioration by reducing the time of storage periods between manufacture and use. Unlike machines, equipment, tools and the like, soap can be made in a hurry when needed. Therefore, we can see no reason for purchasing soaps after the fashion of machines or equipment. It may prove to be tremendously wasteful in the long run.

THREE months ago when oil and fat prices were a lot lower than they are today and the stocks of fats and greases appeared topheavy marketwise, we commented editorially that ". . . we know from observation of some years that if we had a soap factory, we would not let ourselves run short of any kind of oil or fat,—and particularly so in the light of present low prices." That was three months ago. Today, we are in the midst of a rising market and apparently fat stocks in the hands of soapers are considerably larger at present than they were three months ago.

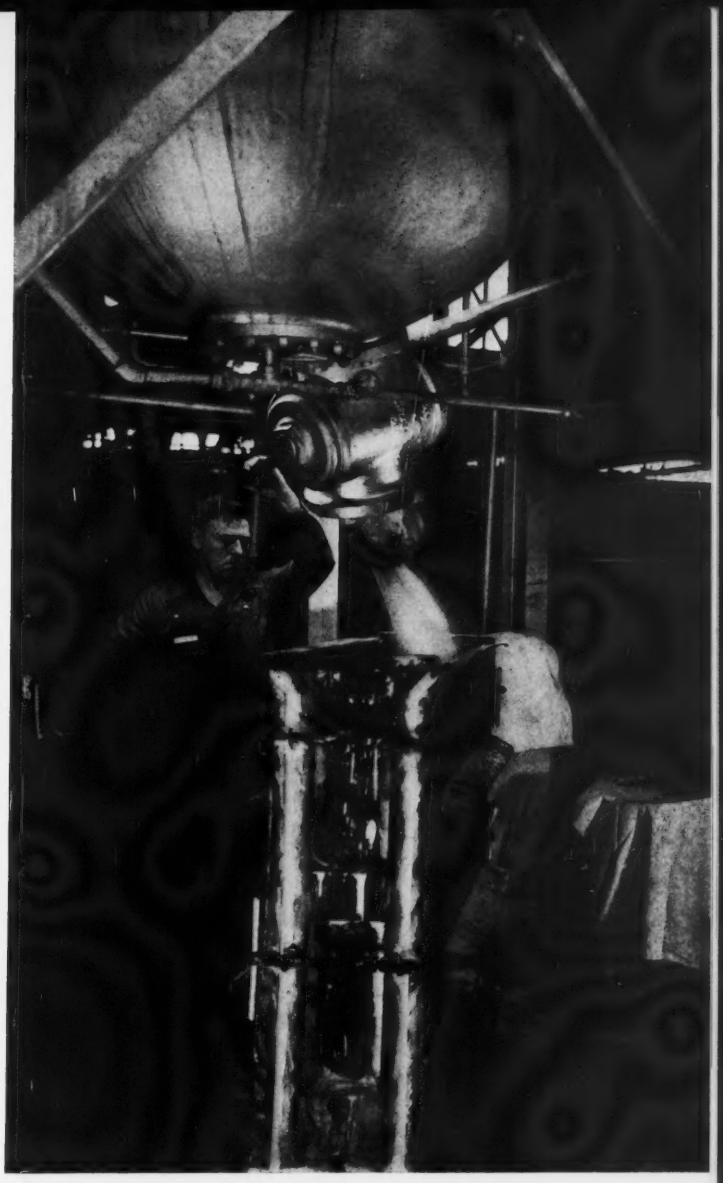
Now, it seems that the same soapers who worried about being short of fats and oils several months back, are now worrying about having too much on hand. The fact that the value of their stocks has appreciated appears to be ignored. What will happen if the war in Europe suddenly ends? Some of them,—although others disagree,—believe that the bottom would fall out of the market. Maybe prices would drop. Who knows? But, it should be considered that even with the rise of the past two months, fat and oil prices, with exceptions like olive oil, are not much above a long-term average, and far below what they were during the last war. Also, following the termination of hostilities in 1918 and a temporary drop, oil and fat prices rose to levels higher than ever. So, until proved wrong by events, we continue to maintain that full oil tanks still represent the part of wisdom on the part of soapers under present conditions.

SOAPS are not properly perfumed, we judge from a recent editorial in the *Oil, Paint & Drug Reporter.* Says the editor of that publication, who incidentally smokes the stinkingest pipe this side of Suez:

"Soap has a two-fold esthetic role in everyday life: it cleanses to please the eye, and it deodorizes and reodorizes to please the olfactory nerves. With the introduction of various alkaline phosphates the cleansing properties of soap have been markedly improved. But, the other side of this widely used friend of humanity has not been given commensurate attention: all too many soaps still have the odor of a Bulgarian brothel—or of a kennel.

"Inconsiderateness in respect of odor is most pronounced among liquid soaps. The few exceptions prove that this fault is easily and pleasantly remedied in the direction of the pines and the spices. It is reasonable to assume that the same is true with respect to the popular household soaps which may have a justifiable odorant relation to lingerie, but which certainly impart the wrong kind of scent to tableware. Mints and spices are far more appropriate there than mosquito repellents or 'Bouquet de Big Night'."

Now, the editor in question could be an authority on Bulgarian brothels, and their odors. We would not know, never having visited one of the Bulgarian variety. But, we do know that modern soap perfuming does not warrant the swift kick in the pants which he gives it. The public must like it, even including "Bouquet de Big Night." The rate of increase of consumption in toilet soaps, including the liquid variety, is greater than in any other branch of soap manufacture. Perfumed soaps, highly perfumed soaps, are ever more and more in demand. And so, Mr. Editor, we feel that before you start sniffing any more soap perfumes that you should ditch that crusty old pipe, and really undertake a fair test.



Proper framing, and preparation of the frame before filling aids greatly in the reduction of scrap soap.

SOAP SCRAP...

Cutting down and handling scrap in the soap plant

By C. R. Kemp
J. R. Watkins Company

THE amount of scrap soap varies widely from plant to plant, depending upon numerous factors. One thing is certain, and that is there will be some scrap. The percentage based on total soap production may range all the way from less than one per cent up to as much as ten and fifteen per cent according to conditions. This percentage figure is of very material importance, and so is the disposition which is made of the scrap, for the two together may well be the determining factor in the color of the ink used in the annual or semi-annual financial statement of the factory. It is quite obvious that a large producer having long runs of only one or a few items is always in a much better position in regard to scrap than is the small manufacturer who makes much smaller lots of numerous items.

In a general way there are only two things to consider regarding the scrap problem, first, that proper methods are employed and careful attention given to making the least scrap possible, and second, proper disposal of the scrap, which means the most advantageous to the manufacturer.

Suppose we begin an imaginary trip around the plant and examine some of the potential points of saving on scrap. Begin at the soap kettle. The neat soap will first flow into pipe lines which must be well insulated and tight. Leaks from flanges, fittings, stopcocks, valve stems, etc., will be the first scrap to occur and it is more apt to be dirty scrap as it will fall to the floor. This may be the proper time to remind ourselves that clean scrap is more valuable than dirty scrap. So, good tight lines will save on scrap, and besides they are safer, because a small leak can become a large blowout that might cause damage or personal injury. From the kettle, the soap will probably go to a large storage tank. This tank will or should be well insulated and provided with some means of keeping the temperature of the soap even, otherwise if the soap chills, the quantity of scrap is again increased. If there should be no storage tank and the soap is removed from the kettle in small portions at intervals, then there will be "blow-

backs" that will harden to some extent and may represent just so much scrap.

The soap flowing from the storage tank will flow, generally speaking, toward two departments. First, into crutchers if filling material is to be added, or direct to the drying machines via chilling rolls. Second, into crutchers and the framing department. There should be little opportunity for scrap to occur in the crutchers, provided they are kept at the proper temperature and care is taken to prevent splashing.

Passing on to the drying machines, we find several places in which scrap will occur. First, the trough atop the chilling rolls will have to be kept warm, with frequent cleaning around the edges so as to work in the soap which has just begun to harden. Most dryers are so constructed that a row of wires or needles mark the surface of the soap film into strips, which are shaved off by means of a knife. The amount of scrap made in this operation will depend upon the "feed" or quantity of soap film upon the roll and the condition of the wires or needles. If they are allowed to wear too flat, naturally they will make more scrap. Good results are obtained by using No. 1 Darners as they are thin and not expensive, and frequent changing is possible. The scrap at this point for an average soap should not be much in excess of one per cent.

After the wet ribbons of soap enter the drying chamber, there will be some particles pass the screen. Usually there is more scrap made when running a dry thin flake than from a heavier moist flake. If the drying machine is in good order there is not much that can be done to lessen the amount of scrap. When the flake soap emerges from the dryer it will in some manner be conveyed to some desirable place. Some common methods of conveying are, by flowing with air, by moving belts, worms, buckets, etc. None of these methods should cause scrap to occur if they are in good working order. Flakes suitable for some type of packaging will be conveyed, usually, to a hopper or bin from which the flakes will be packaged. There should be very little cause for making scrap while packaging. If there should occur a condition such as "blowing" or "dusting" while packaging, it can be overcome by dust collecting systems, from which the scrap can be recovered. If the dried flakes are to be ground or pulverized, it should be done in a tight open circuit with a dust collector.

Moist flakes coming from the dryer are usually to be consumed in the milling department of the toilet soap plant. They can be conveyed in any suitable manner. There should be no scrap between the drying machine and the bin in which the soap is finally placed. The usual orderly arrangement of having the base soap for milling in a bin above the hopper of the first mill is a better arrangement than having to shovel the soap. There should be no scrap at this point. Weighing and mixing in the amalgamator are operations where with care no scrap should occur. The milling operation may on occasions make some small amount of scrap, but such scrap as may fall from the rolls into the pan if promptly picked up can be returned to the milling operation. If the rolls of the mills are properly adjusted, kept at the right temperature and the knives correctly set, then there should be very little scrap in the actual milling operation.

The means of conveying the milled soap from the mill to the plodder will determine the amount of scrap if any. If a proper mechanical device is employed, there should be no scrap. However, if it is conveyed in trucks and manual feed is employed, there will usually be some soap fall on the floor. At the end of a run of milled soap or after the plodder has been allowed to stand idle, there will be some soap left in the nose, a "header" if you please. This "header" must then be considered as mill scrap.

The next operation will occur at the cutting table where scrap is naturally expected, but careful adjustment of the feed will reduce this scrap to a small amount that can be returned frequently to the mill. However the scrap occurring after the mills have "run out" will have to be considered as necessary scrap, and it is not recommended that it be returned to the plodder.

The pressing operation should not make very much scrap once the job is set and running, if box dies are used. However pin die and cut-off pressing will make quite a lot of scrap, much of which can be promptly returned to the mills except where they have "run out," then as in the case of the plodder, the remaining scrap will have to be considered necessary.

The most important consideration in keeping down scrap in the milling and pressing department is to have a uniform milling base. The term uniform employed herein has reference to the moisture content in particular. Every manufacturer knows that if the mill base is too dry or too moist that trouble will occur in the milling and consequently unnecessary scrap will occur. Moisture tests made on samples taken from the output of the dryer every 15 or 20 minutes will provide an excellent means of accurate control of the condition of the mill base. Apparatus is available for making these determinations in 10 minutes, and must be considered as a most valuable aid.

LET us now take a look into the framing and cutting departments. The frames, of which there are several types, if kept in good repair should not be the cause of much scrap due to leakage. The method employed in making the frames ready for use may not affect the percentage of scrap in the cutting operation, but it may affect the condition of the soap. Where the ordinary frame is used, some manufacturers resort to various means such as oiling or paraffining the iron sides to prevent sticking when the stripping is done. Whether some means are employed or not, the scrap from the outside of the soap will not be clean enough to use for remelting. The use of parchment paper liners inside the frames will

permit easy stripping and the outside scrap will be clean enough for remelting. Each envelope liner for a standard size frame will cost about 20 cents. This would not represent extra cost to a manufacturer who had been "soaping" the frames tight because this operation becomes unnecessary when the paper liners are used.

When filling the frames with soap some thought should be given to filling to the correct height, especially if the size of the slabs are known in advance. Such things as cutting the soap away from the sides of the frame near the top while cooling, and pressing the top, in order to avoid "valleys" will greatly assist in keeping down scrap.

It is on the cutting table that a large percentage of the scrap is made. The percentage will vary with different conditions. For instance if the manufacturer makes only one or just a few items, then by careful calculation he will be able to figure cuts that will keep the percentage down. On the other hand if the manufacturer has many items of different sizes and weights, then the average percentage will necessarily be larger, but this is usually taken into consideration by the cost department and allowance is made for it when making total cost figures for pricing. Here again, every effort must be made to keep the scrap clean or it will not be fit for remelting.

HAVING considered most of the important points at which scrap may be encountered, now consider what can be done with the scrap. In a general way this scrap will be in one of two classes, clean or dirty. Dirty scrap should not be remelted and must usually be boiled again. This means a loss of perfume, perhaps filler and other items. Sometimes even then, it cannot go back into the grade of soap from which it has come, and will have to be used in a lower grade, and thus a further loss is incurred.

There may also be a further classification of scrap into fresh and old scrap. Every manufacturer knows that it is much easier to rework fresh scrap than old hardened scrap. However, in spite of best efforts and intentions there will be some old dry scrap, and it must be disposed of in some manner. The chances are that it will be re-boiled unless by some fortunate arrangement it can be ground up and incorporated in some kind of a washing compound. Reboiling old scrap is a comparatively long job, especially if the scrap be of the milled and compressed variety. Here, perhaps one of the best solutions to this problem is to run the scrap through a pre-plodder. There should be several plates for this preplodder, say one with large holes in it, one with medium holes and another with small holes. If the scrap is very old and hard, it is suggested that the plate with the large holes be used in order to lessen the resistance and also the load. Other scrap may permit using smaller size holes in the plates. In any event, the object ac-

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Greater care in slabbing and cutting cold-made and semi-boiled soaps can help in reducing the percentage of scrap soap.

PAINT

PAINTED walls, found in all buildings, but especially in hospitals, institutions, office buildings and apartment houses, probably require a minimum of attention as compared with any other wall finish. Being durable, paint lasts much longer than it will stay clean. Even on a vertical surface such as that presented by interior walls, dirt accumulates in time, eventually producing an unsightly appearance unless something is done about it. Cleaning painted walls is a matter of straight economy, this method of refurbishing costing much less than repainting.

Washing down paint gives good enough results so that it is quite generally practiced. Probably every cleaning agent that was ever invented has been used for the purpose. A great deal of the cleaning is undoubtedly accomplished with plain soap and water, although some part of it is done with special products sold for that purpose.

Painted walls will in time acquire a light film of greasy soil, and, what is much more evident, dark smudges and a general coating of soot. Both grease and soot accumulate from the deposit of tiny particles from what may seem like a perfectly clean atmosphere. The ancient question of where dirt comes from does not have to be answered in order to try to find out what can be done about it. The type of agent required to remove grease and soot easily and efficiently is one with high emulsifying and dispersing power. A liquid that merely wets the soil without also being able to disperse it, is of small value. Since a great deal of labor is involved in washing walls, which makes it a relatively costly procedure, the washing is usually not done until the walls become very noticeably spotted and darkened. This means that a very substantial amount of dirt has to be removed, requiring real detergent action.

Although many people responsible for the upkeep of large buildings probably stick to the use of plain soda tallow soap for washing paint, this is not the best agent. While an excellent cleaner, a solution of ordinary soda soap, applied to a solid surface tends to leave a light film of soap on that surface which will be more or less sticky in nature. Although this leaves the surface looking clean, it will become soiled much more quickly afterward because particles of soil will adhere to the soap film. A proper detergent for paint is one which is much more soluble in water than ordinary soda soap, so that it can be removed completely or very nearly so, with one quick rinse with clear water.

As to the types of painted surfaces, most walls are given a dull finish, the plaster itself being "textured" to give a mat surface. This is especially true in apartments and hotels. This slightly rough surface collects dirt more easily than a perfectly smooth one, the latter being used more in hospitals where cleanliness is emphasized more than appearance. Painted woodwork such as doors, door and window frames, and baseboards, on the other hand, are commonly painted with a gloss paint, giving a very smooth surface and

CLEANERS

By Dr. C. A. Tyler

high luster, often termed an enamel finish. This surface requires more care in treatment in order not to remove the gloss. Varnished and shellacked wood such as the hardwood floors of apartment houses, can be cleaned with the same agents that are satisfactory for gloss paint. Although differing greatly in appearance, varnished, shellacked and painted surfaces are not so unlike as they seem.

For painted walls a dilute solution of trisodium phosphate has been widely used. This makes a good cleaner, but particular care must be observed not to make the solution too concentrated. For a paint cleaner, about a tablespoonful of trisodium phosphate to a gallon of water is enough. A strong solution of this salt is a paint *remover* which actually destroys part or all of the paint film itself, depending on concentration and time of contact. Trisodium phosphate being a strongly alkaline salt, it has a pronounced emulsifying action on soil of an oily nature.

Even a dilute solution of trisodium phosphate has a rather strong cleaning action, suitable for flat paints rather than for gloss paints. Any strongly alkaline solution is apt to dull the gloss of these, presumably by reaction with the dried gum or resin which forms the outer surface of the glossy film. Shellac and varnish correspond more to enamel or gloss paint than to the highly pigmented and loaded flat paint, and therefore should not be cleaned with strongly alkaline cleaners. Soda ash, less alkaline than trisodium phosphate, can also be used for cleaning walls but it is not as effective as the phosphate.

To clean enamel, gloss paint, varnish, and lacquer, a soap, preferably a potash soap because of its high solubility, is one of the best cleaners. Soap builder in the form of a moderate proportion of alkaline salt, will enhance the suspending and emulsifying power of the soap solution. Naturally anything that can be used on a gloss finish can equally well be used on a flat finish, although the reverse of course does not hold. An alkaline salt like trisodium phosphate, used to build soap rather than as a cleaner by itself, will decrease the amount of soap needed, without giving too harsh an effect. After cleaning with potash soap, any soap residue can be easily removed with a rinse of warm water. When an alkaline salt is added to soap as a builder, this means that the soap should be the major, not the minor, ingredient, the builder being present in small proportion compared to the soap. Since the soap is the more expensive ingredient, there may be some tendency for the manufacturer to increase the amount of builder disproportionately.

Many household soap products today contain an addition of tetrasodium pyrophosphate to avoid the precipitation and loss of soap in hard water. The same principle can be applied to advantage to paint cleaners containing soap, pyrophosphate being a soap saver in the presence of calcium and magnesium salts. A few per cent of tetrasodium pyrophosphate is usually sufficient, although the amount naturally depends somewhat on the hardness of the water to be used. In ordinary laundry soap, about 10 per cent is usually added.

More recent attention in the science of cleaning painted walls and other painted surfaces has been focused on products based on the synthetic detergents, that is the non-soap, non-alkaline organic surface active agents. These include the sulfated fatty alcohol derivatives, alykl sulfonates, and others, sold under various trade designations such as lamepons, sapamines, nacconols, aerosols, igepons, tritons, gardinols, etc.

The advantage of these newer products is held to be their complete neutrality in solution, and accordingly their harmlessness to any type of painted or varnished surface. In addition, they are good detergents and are generally equally effective in acid or alkaline media, hard or soft water. On the whole, their higher cost has retarded their uses in special cleaners, but this condition is rapidly being changed. They are sold to a limited extent thus far, but their sale is expanding, in the form of both liquids and powders, either ready for use or for dilution with water. For painted surfaces which are subjected to frequent washing, they appear to have marked advantages over other products for the purpose, especially in preserving the life and lustre of the paint.

With paint cleaners, commercial products can be varied in a multitude of ways. Because of this the most practical approach would seem

to be a study of what is actually being sold for the purpose, what is in these products, what is good about them, and what is not good. Branded cleaners appear on the market as liquids, pastes and powders, which makes a convenient classification for discussion purposes, even though the ingredients in any one class are not necessarily related.

Liquid Cleaners

SOME of the liquids are so dilute that they are advertised as requiring no water, no rinsing, therefore only one application, a cloth being moistened with the cleaning fluid and rubbed over the painted surface. An example is a product containing about 94 per cent of water, about a half per cent of potash soap, and a little borax, ammonia, and soda ash, the three totaling about 5 per cent. Borax possesses no virtue either as a cleaning agent or as a soap builder. It is probably put in simply because of its cheapness as one more ingredient. This liquid retails for $1.25 for a half gallon can, the ingredients in each can being worth only a small fraction of this. It undoubtedly has good cleaning action in spite of the borax, but for those who know something about the composition of such a product, it is difficult to understand how it can continue to be sold at that price.

Another liquid said to "remove soil in one easy operation," contains over 98 per cent of water, again with the idea of avoiding the rinsing operation. Present in a total amount of about 1.5 per cent is a mixture of the following ingredients: Sugar, an oleate soap, a synthetic detergent in the form of fatty alcohol sulfate, trisodium phosphate, sodium thiosulfate, and ammonia. What the sugar and sodium thiosulfate are for is anybody's guess. Sugar has sometimes been added to soap to promote transparency, but why it is added to this dilute solution is a mystery. Again, the product is a good cleaner, since it contains enough soap, soap builder, and synthetic detergent to give a strong cleaning action without being at all harsh. The retail price, $1.12 for a half gallon can, is again for ingredients costing very little.

Most of the liquids are more concentrated than the two just discussed, the directions being to use with water and to follow the cleaning with a rinse with clear water. Theoretically this is sounder practice, as it leaves the surface of the paint clean and free from a deposit of soap.

A soap product for cleaning woodwork contains about 30 per cent of potash soap and 1 per cent of excess oil to give a particularly mild product apparently intended for use on gloss paint, varnish and shellac. This, of course, is a concentrated solution to be diluted with water, the directions calling for 1-2 tablespoonfuls to a quart of water. Cleaning is to be followed by a rinse after which the paint is to be rubbed dry. The excess oil would tend to leave a light film on the surface to promote luster. This is the superfatted soap similar in some ways to those used in shaving products where a particularly mild and non-alkaline effect is desired. This is the kind of product about which it could be said that it harms nothing that water will not harm. The selling appeal played up on the label is its non-injurious character. At a price of 35 cents for a 16-ounce bottle, the purchaser receives about 12 times as much of active ingredients for his money as he does when he buys the dilute products mentioned above.

Essentially a 3 per cent solution of trisodium phosphate, another liquid is sold for use without dilution, to be followed by rinsing. Although this is a good paint cleaner, it is apt to dull the surface of a gloss finish, particularly with continued use.

A quite different type of liquid is an emulsion of kerosene and water, about 5 per cent of triethanolamine soap serving as emulsifying agent. Since the liquid is to be applied without dilution, this is using an unusually high concentration of soap. The kerosene is a grease solvent and attacks the greasy base of the soil very quickly. Because of this double action, the cleaner should be highly efficient in loosening the soil. There is some question as to whether a rinse of clear water would remove all of the kerosene, since the original product contains about 60 per cent of this. This formula approaches that of some furniture polishes, and may be intended as much for that as for cleaning paint, the product being guaranteed by the manufacturer "against any harmful effect to painted, varnished or lacquered surfaces." Such a product is evidently designed for cleaning woodwork and furniture but is intended to have a broader appeal than it would if labelled furniture polish.

Similar to the preceding product in some ways, in that it contains kerosene emulsified in water with soap as the emulsifying agent, another liquid contains in addition about 7 per cent of colloidal clay. The proportion of kerosene is less than 20 per cent, that of soap about 6 per cent. Applied without dilution, here again we have the marked detergent effect of a high concentration of soap plus the solvent effect on grease or kerosene. Colloidal clay makes a good addition, particularly for this kind of product, so that it is surprising that more of them do not contain it. The clay acts by increasing the dispersing power of the soap since the clay has a marked capacity for adsorbing solid particles and keeping them dispersed. It has no abrasive action. In the presence of colloidal clay, less soap can be used to give the same detergent effect.

Paste Products

VERY similar to one of the liquids described is a paste soap containing excess oil, the concentration of soap merely being increased to the point where a paste rather than a liquid results. The soap content is about 35 per cent of potash soap. Dissolved in water to give a simple soap solution, this

is naturally suitable for many cleaning purposes where it seems desirable to avoid any marked degree of alkalinity. Priced at 65 cents for a two-pound can, this is a better buy from the consumer point of view than many of the liquid products, since it is easy enough to dissolve the soap in as little or as much water as one wishes.

A second 35 per cent potash paste soap is not superfatted but is considered so mild by the manufacturer that he recommends it for cleaning not only painted walls but oil paintings. The price is also comparable, the soap selling for 21 cents for a one-pound can.

Since Venetian blinds have come into rather wide use, a number of specialties have been put on the market as Venetian-blind cleaners. One such is a paste soap. Being made with soda soap, this contains much less soap than the potash paste products, namely, about 7 per cent. With this, is a builder in the form of 3 per cent of sodium silicate. The paste is supposed to be rubbed over the blinds to remove the soil, then rubbed off in turn with a clean wet cloth. Venetian blinds made of wood are not perfectly smooth, the paint is usually a flat finish, and they pick up an unbelievable amount of dirt, particularly when adjusted to a more or less horizontal position. Paste soap should give very effective cleaning, silicate being a good builder for it, but the soap has to be removed with care, which is naturally a laborious process. The advantage of rubbing on a paste cleaner is that it does not drip when applied to the slats, the problem being somewhat different from that of washing walls or ordinary woodwork.

A paste product sold to "clean and restore the luster to enamel, varnish and lacquer" contains naphtha, mineral oil, and water, with soap as emulsifying agent, — also glycerine, carnauba wax, and tripoli, —quite a complex mixture, in fact in principle very like some of the automobile cleaner-polishes. Such a product is better for attack on grease than on a sooty type of soil. Tripoli, a mild abrasive, loosens solid soil, but so much friction should hardly be necessary in cleaning woodwork. The carnauba wax is meant to leave a film of wax as a polish to give a lustrous finish. While this product would clean it also is supposed to function as a wax polish and is offered for special uses with this in mind.

Powdered Products

POWDERED paint cleaners are essentially variations of alkaline salt mixtures. Instead of selling a dilute solution of trisodium phosphate, the salt or some combination of salts is sold to be dissolved in water. These products are more suitable for institutional cleaning where the object is to get a quick cleaning with a minimum of labor. Their high alkalinity makes them harsher in action than soap.

One such powder is a mixture of about 92 per cent soda ash with 8 per cent of soap, a tablespoonful dissolved in a gallon of water giving the cleaning solution. This being inexpensive, also has an appeal in institutional cleaning. A similar mixture contains about 30 per cent of trisodium phosphate, 60 per cent of hydrated sodium carbonate, and 8 per cent of soap. This gives a more alkaline solution than the first powder, since trisodium phosphate is a stronger alkali than soda ash. It is a quick cleaner, but is not suitable for gloss paint.

A powdered product claimed to be "especially adapted to washing painted and enameled surfaces" contains about 9 per cent of soap, 20 of soda ash, and over 60 of crystalline silica, an abrasive. This is a mistake to use a strong abrasive in a paint cleaner as it will scratch if rubbed directly on the paint. If the powder is stirred up in water, as recommended by the manufacturer for cleaning painted walls, the abrasive will pretty much settle to the bottom of the pail, the dissolved soda ash and soap then doing the cleaning. Such a product is more of a scouring agent than anything else, of the type meant for the scouring of tile and terazzo floors. What the manufacturer is probably trying to do is to make his product too-inclusive. He may sell it primarily for industrial cleaning, for factory floors and such places, but may want to dress it up with broader claims. It seems better to know what a product is good for and restrict claims to such uses.

Resembling flour in appearance, a paint cleaner quite different in type is based on about 70 per cent of cornstarch. With this is mixed about 14 per cent of trisodium phosphate and 7 per cent of soda ash. The powder is gradually stirred into water to make a thin paste, which is rubbed over the wall, then wiped off while still wet. This is a little like the colloidal-clay cleaner. The starch forms a colloidal suspension which is highly adsorptive in character, picking dirt off the wall by preferential adsorption after the dirt has been wet and loosened by the alkaline salt solution. This is supposed to be a method which avoids scrubbing, but it does not justify any claims for safe or mild action, since the alkali is used in fairly concentrated solution.

A powdered cleaner having a mild bleaching action to assist in the removal of stains contains a patented compound of trisodium phosphate with sodium hypochlorite, containing 1 per cent or so of available chlorine. Mixed with 65 per cent of this special compound are 23 per cent of soda ash and 12 per cent of sodium silicate. This seems to be a paint cleaner incidentally, being recommended more particularly for dishwashing and the laundry, used in conjunction with soap in the latter case. While the manufacturer apparently did not have this in mind, some such cleaner might have a place for washing the white walls of operating rooms or similar surfaces.

If one wished to develop an antiseptic cleaner, sodium hypo-

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DETERGENT VALUE . . .

Some notes on its relation to composition of laundry soaps

By Andreas Treffler

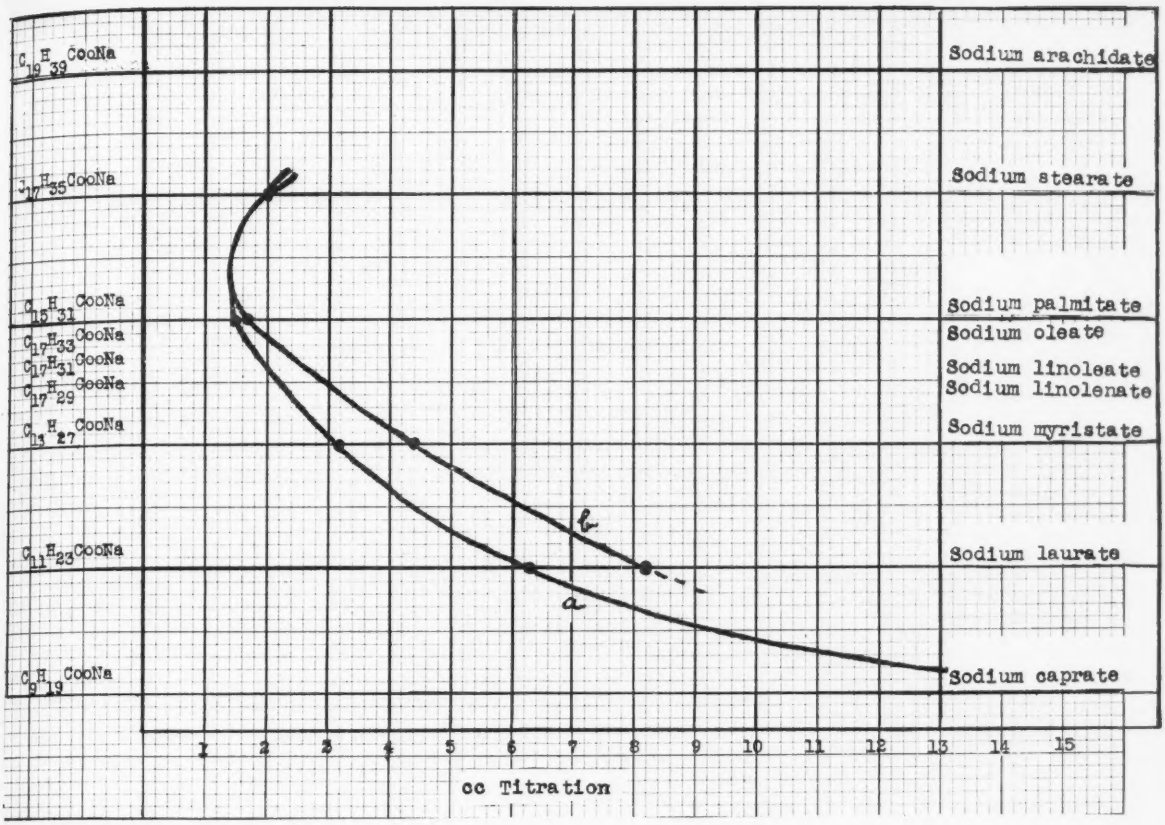
THREE steps comprise the customary procedure in wet laundering by use of soaps and alkali mixtures, (a) neutralization of acidity usually found in soiled laundry goods, (b) softening the water used as a solvent for the soap, and (c) emulsification and removal of the soil in the goods. Acidity in soiled laundry goods generally arises from sweat and other exudations from the skin. The skin of a healthy person has an acid reaction, a pH of 5.5, maintained at this point by the activity of bacteria and acids formed by the decomposition of organic matter.

To neutralize this acid type of soil is the first step in laundering, and this is usually accomplished by means of some alkali composition with a pH of 12 or higher. Under various trade names, these alkali mixtures for the break, consisting of powdered caustic soda with trisodium phosphate, soda ash, metasilicate, or pyrophosphate, and a small percentage of soap and sometimes pine oil, or other solvent, according to the material being washed, are being used with success. This alkali treatment not only neutralizes the acids present, but leaves the laundry goods in an alkaline condition and enhances the detergency of the soap when subsequently used.

The second step in wet laundering is softening the water used in dissolving the soap to avoid the formation of the customary insoluble calcium, magnesium, and iron soaps as well as water insoluble phosphates and silicates of the same metals. This is, of course, important in cities where very hard water is available. Such decomposed soaps and alkalies break the suds and only the addition of an excess of these cleaning media can overcome this property by forming complex compounds with these insoluble particles and rendering them colloidal or peptized.

The third step in wet cleaning is the emulsification or suspension of the other impurities or soil either by peptizing them or by forming a peptized film around them. It is a fact that carbon black dispersed in water does not pass as readily through filter paper as carbon black dispersed in a soap solution. Softening the water and suspension of the dirt are similar phenomena. In both cases, peptization is obtained by the addition of excess soap or alkali. Sudsing of the soap solution will not occur until these three conditions of wet cleaning have been met. The practical laundry man accordingly adds soap and alkalies to the wash wheel until he notices the permanent formation of suds. He prefers certain soaps and detergents because they accomplish this more economically in use than others.

	ccm 1% Soap solution necessary for 5 minutes lasting permanent lather with 58.3 cc tap water.	*Sodium Stearate*	*Sodium Palmitate*	*Sodium Myristate*	*Sodium Laurate*	*Sodium Caprate*	*Sodium Oleate*	*Sodium Linoleate*	*Sodium Linoleate*	*Sodium Rosinate*
at 70 F	Without Alkalis	2.0	1.5	3.2	6.3	15.4	1.9	2.6	3.0	Salted Out
With 1 ccm of	5% T.S.P.P.	1.7	1.3	1.7	3.2	2.0	.75	1.5	.5	.6
With 1 ccm of	1% T.S.P.P.	1.9	1.7	2.9	4.1	no permanent lather	1.7	3.3	7.5	Salted Out
With 1 ccm of	5% Soda Ash	Salted Out	2.3	3.1	6.0		1.4	2.1	3.1	
With 1 ccm of	5% T.S.P.	1.8	1.3	2.7	6.5		1.2	2.2	3.3	
With 1 ccm of	5% Metasilicate	Salted Out		2.8	4.4		1.5	2.1	5.7	
With 1 ccm of	5% Borax	2.0	1.8	3.0	6.0		1.6	2.4	2.6	
With 1 ccm of	5% Caustic Soda	Salted Out		3.0	6.3		1.4	2.4	5.4	
With 1 ccm of	1% Metaphosphate	2.0	1.2	.6	.9	5.1	.25	.6	.2	
at 160 F	Without Alkalis	2.0	1.7	4.4	8.2	n.p.l.	2.5	3.5	4.0	Salted Out
With 1 ccm of	5% T.S.P.P.	1.0	1.2	6.0	9.0	15.3	.3	3.0	1.2	1.2
With 1 ccm of	1% T.S.P.P.	1.3	1.6	6.5	10.0	no permanent lather	2.1	3.8	9.0	Salted Out
With 1 ccm of	5% Soda Ash	1.4	1.4	no permanent lather			2.1	3.4	5.8	
With 1 ccm of	5% T.S.P.	1.3	1.4	4.7	9.7		1.3	3.5	7.0	
With 1 ccm of	5% Metasilicate	1.1	1.2	no permanent lather			2.4	no permanent lather		
With 1 ccm of	5% Borax	1.5	1.6	5.2	9.7		2.4	3.6	4.2	
With 1 ccm of	5% Caustic	1.3	1.5	no permanent lather			2.3	no permanent lather		
With 1 ccm of	1% Metaphosphate	.2	.2	.2	.4	9.2	.1	.2	.4	4.2



Water softening and lathering power of the various sodium salts of the fatty acids in laundry soap, titrated without alkalies.

The object of my work in the laboratory and in laundries has been to determine which types of laundry soaps are giving best results in laundering at room temperature and at 160° F. For laboratory tests, I modified the method used for testing the hardness of water and titrated 58.3 cc. tap water (1.6 U. S. grains hardness) with different 1 per cent soap and 5 per cent alkali solutions in four-ounce oil bottles to a five minutes lasting permanent lather.

The accompanying table gives the results obtained by titrating with sodium soaps, made from the saturated fatty acids: stearic, palmitic, myristic, lauric, capric, and with sodium soaps made from the unsaturated fatty acids: oleic, linoleic, linolenic and rosin at temperatures of 70° F. and 160° F. High titre soaps, such as sodium stearate, sodium palmitate and the low titre soap of the unsaturated series, sodium oleate, used without any alkalies, gave at both temperatures better results than the rest of the compounds. In the diagram are given the different titration values of the soaps shown in the form of two unfinished parabolas:

(a) representing the values at 70° F.

(b) representing the values at 160° F.

The molecules with 15-18 C atoms are the best constituents of soaps according to the chart, which confirms the general belief of soap makers that high titre soaps are most economical in laundries. While sodium stearate gives a very abundant lather at high temperatures, its lather at room temperature is weak, indicating its decreasing solubility. Small quantities of caustic soda which precipitate sodium stearate at room temperature, pectize its colloidal solution. The laundry man calls the appearance of such insoluble soap formation, soap spots.

Sodium rosinate, whose molecule has 20 C atoms, has no foaming qualities at all in hard water. The salt particles present in hard water are sufficient to change the electric charge of the colloidal solution and cause coagulation or pectization. In distilled water, where no electrolytes are present, a permanent lather (lasting five minutes) is obtained.

Some alkalies like soda ash, metasilicate and caustic soda stimulate at room temperature the salting out process of high titre soaps in the saturated series. The results given in the table show distinctly that at room temperature high titre soaps are best used without any alkalies, which cause only trouble and are not very effective, but at high temperatures their value is improved by the addition of alkalies.

Low titre soaps of the saturated series, which are the main constituents of coconut oil soap, form a quick lather and make an excellent toilet soap, but in laundries they should be used in mixtures with high titre soaps, rendering the latter more soluble, especially at room temperature. At high

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The Trend In
SOAP BUYING HABITS

Milwaukee survey discloses packaged laundry soap flakes and chips only type of laundry soap product gaining in consumer acceptance in 1941 . . . Brushless shaving creams continue to increase in popularity, at expense of lather type . . . Toilet soap use reaches new high . . . Tooth paste gains users, while powders and liquids show loss.

GAINS in consumer acceptance of toilet soaps, package soap flakes and chips, package scouring cleaners, bleaching fluid, tooth pastes, liquid shampoos, brushless shaving creams, and steel wool cleaners and losses in the popularity of white and brown laundry soaps, soap crystals and water softeners, granulated soaps, toilet bowl cleansers, tooth powders, liquid dentifrices and lather shaving creams were some of the more important trends indicated in the recent 1941 Consumer Analysis of the Greater Milwaukee Market.*

Package Soap Flakes

As shown by the survey, in which the buying habits of 165,486 families are analyzed, package soap flakes or chips are the most popular of all laundry soap products with 81.5 per cent of all families buying this type. Package soap flakes have the distinction of being the only type of laundry soap to show a gain in popularity this year. From 76 per cent in 1939, the use of package soap flakes or chips advanced to 79.4 per cent in 1940. The figure of 81.5 per cent attained this year represents a new high for this class of products, —and since the popularity of bar laundry soaps decreased this year, a definite trend seems to be indicated.

Of the sixty brands of package soap flakes or chips reported in use in 1941, the most popular continued to be "Lux" which increased in popularity from 33.7 per cent last year to 34.5 per cent of all soap flakes or chips buyers in 1941. "John Hanser," in second place, advanced in popularity from 23.9 per cent in 1940 to 26.3 per cent in 1941. "Ivory" flakes, making a respectable gain in consumer popularity this year, moved from fourth to third place in preference. In 1940, 16.8 per cent of Milwaukee buyers preferred this brand, while for 1941 a consumer acceptance figure of 19.2 per cent is recorded. "Chipso," although declining only slightly in consumer use from 17.1 per cent in 1940 to 16.7 per cent in 1941, dropped to fourth position. "Clean Quick" and "Jos. Hanser" appear in fifth and sixth positions with popularities of 5.2 per cent and 4.8 per cent respectively.

Granulated Soaps

Among laundry soap products, granulated soap or soap beads rate second with 78.3 per cent of all families regularly using this type. Last year 78.7 per cent of all families in the area covered bought granulated soap or soap beads. In 1939, the popularity was 74.7 per cent. Although widely used by all types of Greater Milwaukee families, granulated soap or soap beads have their highest popularity among families in the lowest income bracket with 80.9 per cent of such families buying these products. The popularity among families of the highest income group was 73.7 per cent.

Back in 1937, only 18 brands of this type of product were reported being used but each year the number of brands reported has increased steadily; in 1938, 35 brands were reported; the number advanced to 44 in 1939, to 51 in 1940 and then to 69 in 1941. In spite of the greatly increased competition, "Rinso," in first place in preference, gained in popularity from 48.3 per cent in 1940 to 48.8 per cent in 1941. "Oxydol," declining slightly in preference from 45.5 per cent in 1940 to 44.1 per cent in 1941, remained in second position. "Super Suds," in third place, showed a drop in popularity from 20.4 per cent of all buyers in 1940 to 17.3 per cent in 1941. Since last year, the name on the regular "Super Suds" package was changed to "Klek" but this brand had a popularity of less than 1 per cent. Gaining consumer popularity from 11.6 per cent in 1940 to 13.6 per cent in 1941, "Ivory Snow" moved from fifth to fourth place. "Duz," in fifth place this year, has a consumer use of 10.7 per cent.

A new feature of the 1941 Consumer Analysis shows the duplication in the use of flakes and granulated soaps. More than 122,000 Greater Milwaukee families, or 61.9 per cent of the total number, buy *both* flakes and granules. Families buying soap flakes exclusively number 38,642, or 19.6 per cent of the total. Slightly more than 32,000 families, or 16.4 per cent buy granulated soaps exclusively, while only 2.1 per cent do not buy either of these products.

* Compiled annually by the *Milwaukee Journal.*

White Laundry Soaps

Both white and brown laundry soaps decreased in popularity this year. In all, 125,191 families, or 63.5 per cent buy white laundry soap as compared with 111,193 families or 56.4 per cent buying brown laundry soap. White laundry soaps showed a substantial gain in popularity last year to 66.3 per cent, but this year the trend was reversed. White laundry soap finds its greatest popularity among families in the lowest income group with 67.4 per cent consumer use as compared with a popularity of 55.8 per cent among families in the highest income bracket.

In all, 19 brands of white laundry soap were reported in use in 1941 as compared with 20 in 1940 and 31 in 1936. Showing another large gain in popularity, "P. & G." continued to dominate the field. In 1940, 64.5 per cent of all users of white laundry soap preferred this brand. This year, a new high of 70 per cent was recorded for "P. & G." Second place went to "Ivory" with a gain in consumer preference from 15.9 per cent in 1940 to 19.1 per cent in 1941. "Crystal White," in third place, was preferred by 18.2 per cent of all buyers this year as compared with 21.4 per cent in 1940. The remaining sixteen brands had a combined popularity of only 1.6 per cent.

Brown Laundry Soaps

The popularity of brown laundry soaps has been on a downward trend for a number of year. Again in 1941, this trend is apparent with only 56.4 per cent of Milwaukee housewives reporting the use of this class of product as compared with 58.4 per cent in 1940 and 63.7 per cent in 1938. In the lowest income group, brown laundry soap has a popularity of 60.9 per cent, while in the medium and higher groupings, the popularity is about 55 per cent.

The number of brands reported in use decreased from 24 in 1940 to 17 in 1941. "Fels Naptha," the perennial favorite, showed a slight gain in popularity from 81.3 per cent in 1940 to 81.5 per cent in 1941. "O. K.," in second place, is the favorite brand of 11.3 per cent of all buyers as compared with 12.1 per cent in 1940. "American Family," the only other brand showing a popularity of greater than 1 per cent, showed a gain in consumer preference from 5.7 per cent last year to 6.8 per cent in 1941. Fourteen other brands had a combined popularity of only 1.9 per cent.

CASTILE SOAP . . . ?
In the light of recent court decisions on labeling olive oil soaps, what is the present status of castile soaps? A 1941 angle on this old controversy of "What Is Castile Soap?" will be published in the next issue of SOAP & SANITARY CHEMICALS.

An analysis of the duplication of purchases of white and brown laundry soap showed that 32.3 per cent of all families buy *both* white and brown laundry soaps; 31.2 per cent buy white laundry soap exclusively; 24.1 per cent buy only brown laundry soap and 12.4 per cent do not buy either type.

Package Scouring Cleansers

After showing a drop in popularity to 86.5 per cent in 1940, the use of package scouring cleansers in Greater Milwaukee mounted to 90.3 per cent this year, the highest figure recorded since 1936. Package scouring cleansers find great favor with families of all income brackets. However, the highest popularity is noted among those in the uppermost group with 92.2 per cent buying this product. The popularity of package scouring cleansers gradually declines as the income of the family decreases. In the bottom income group, 88.5 per cent of the families buy this product.

Only cans with sifting tops are considered in this classification. On this basis, 42 different brands were reported in use this year as compared with 39 in 1940. First place among all brands again goes to "Kitchen Klenzer" in spite of a decline in popularity from 37 per cent in 1940 to 32.6 per cent in 1941. "Old Dutch," in second place, showed a gain in preference from 23.9 per cent in 1940 to 24.8 per cent in 1941. Third place goes to "Sunbrite" with a gain in preference from 8.1 per cent last year to 8.6 per cent this year. "Gold Dust," appearing in fourth position, decreased in popularity from 8.4 per cent in 1940 to 7.2 per cent in 1941. The next four brands each showed gains in popularity. These were: "Brite-Ize," "Bab-O," "Bon Ami," and "Cameo."

Toilet Soaps

A new high in the use of toilet soap was reached in Greater Milwaukee this year with 99.6 per cent of all families buying this product, as compared with 99.2 per cent for each of the previous three years. This year for the first time comparative figures are available on brands of toilet soap for hands and face and toilet soap for bath.

"Lux" continues to be the most popular brand for hands and face with an increased popularity from 26 per cent in 1940 to 26.2 per cent in 1941. Making a spectacular increase in preference from 9.7 per cent in 1940 to 19.6 per cent in 1941, "Sweetheart" jumped from fifth to second place in consumer preference. "Ivory" soap, in third place, showed a gain in popularity from 14.8 per cent in 1940 to 15.3 per cent in 1941. "Palmolive" in fourth place, is preferred by 13.1 per cent of all buyers this year as compared with 21 per cent in 1940. This decrease represents the loss of 15,000 family users. "Camay" comes fifth with a popularity of 13 per cent as compared with 14.6 per cent in 1940. "Lifebuoy" is sixth with a popularity of 7.9 per cent this year, while "Woodbury" and "Cashmere Bouquet" are seventh and eighth with popularities of 5.1 per cent and 1.4 per cent respectively.

Among all brands of toilet soap for the bath, "Lifebuoy," sixth in popularity for hands and face use, takes first place again this year al-

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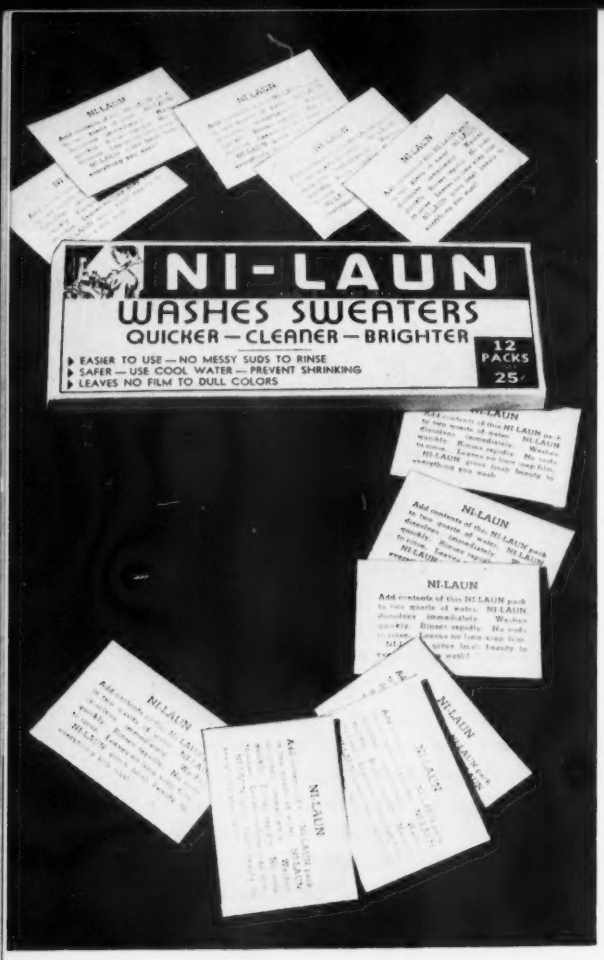
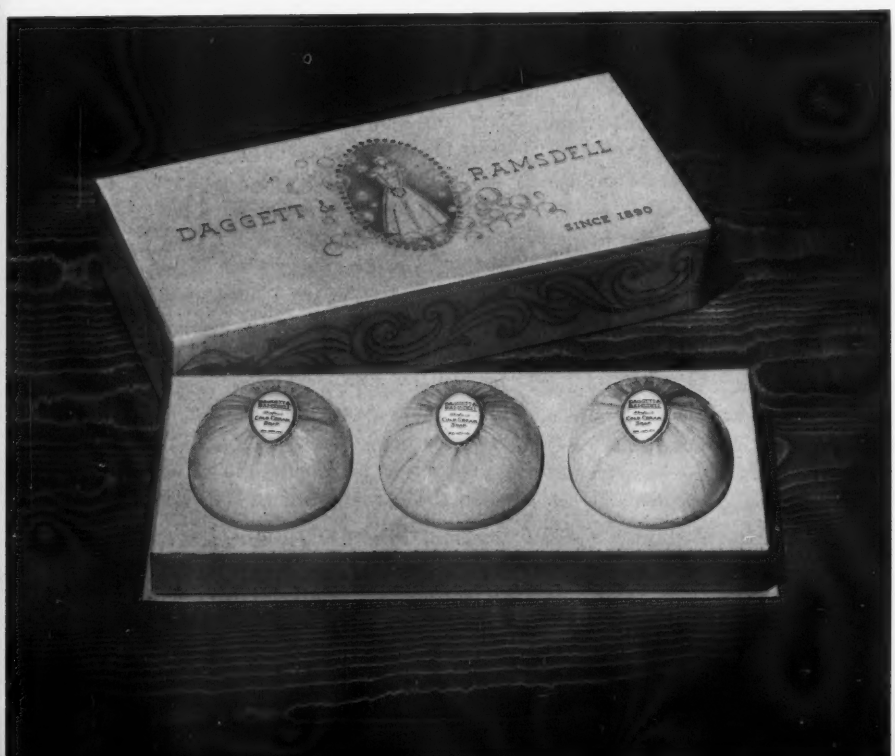
New Products and


NI-LAUN
WASHES SWEATERS
QUICKER — CLEANER — BRIGHTER
EASIER TO USE — NO MESSY SUDS TO RINSE
SAFER — USE COOL WATER — PREVENT SHRINKING
LEAVES NO FILM TO DULL COLORS
12 PACKS
25¢

"Ni-Laun," made by Ni-Laun Products Co., Providence, R. I., is a new and highly specialized product for sweater washing. A soapless powder, it is packed in envelopes each holding enough powder for one washing.

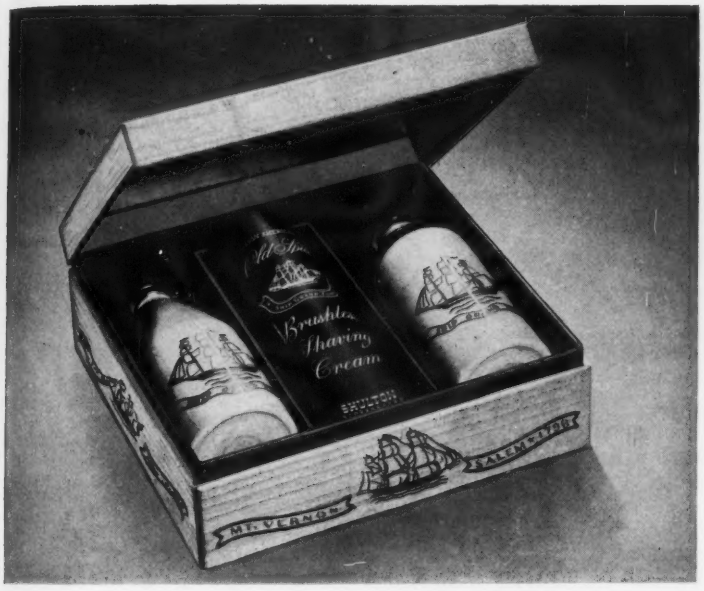
A new lithographed container for "Blue Label Dethol," product of Dethol Mfg. Co., Washington, makes use of a contrasting band at top of container to emphasize added size of package.



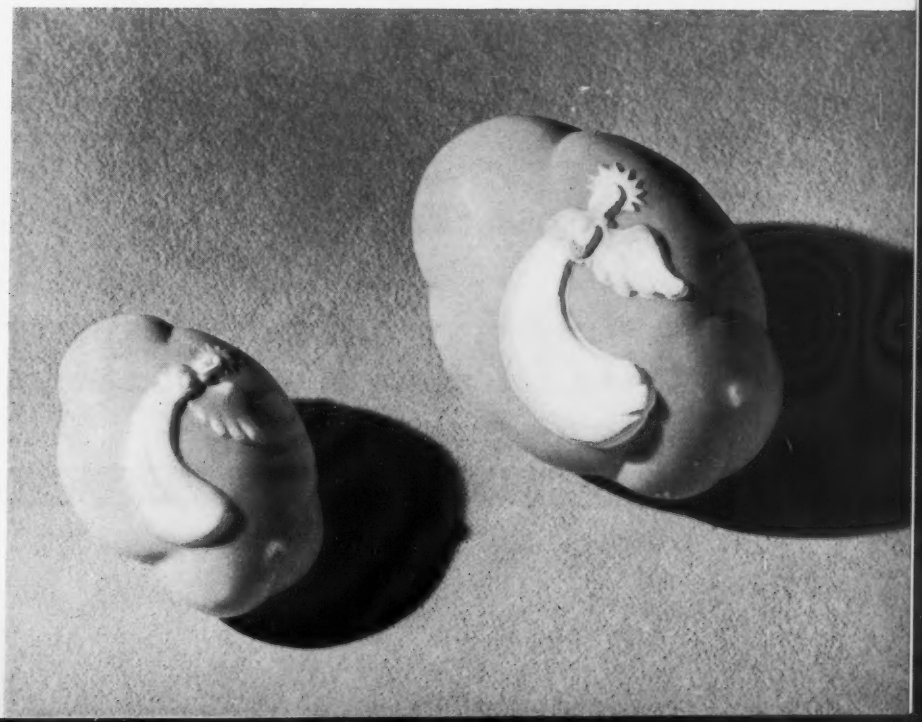
Daggett & Ramsdell, New York, have newly repackaged their "Perfect Cold Cream Soap" in a box decorated in pastel tints of pink and blue. Packed 3 cakes to the box, retailing at 75c.

Packages

Following the success of "Confetti" perfume brought out about a year ago, Lentheric, New York, has just introduced a whole family of accessory items including attractively packaged bath soap and bath oil.



Shulton, Inc., New York, has just announced new packages for the Father's Day market, featuring brushless and lather shaving creams. "Old Spice" after-shave lotion and talcum powder are packaged with the cream in a re-usable wood-veneered chest.



Angels are featured as a decorative motif on the new "Heaven-Sent" line just announced by Helena Rubinstein, New York. Two sizes are offered. Toilet water, body powder and bath oil complete "Heaven-Sent" line.

Raw Materials

for the soap and allied industries

RED OIL

CAUSTIC SODA

STEARIC ACID

CAUSTIC POTASH

TALLOW

DRUMS
TANK CARS
TANK WAGONS

COCOANUT OIL

Animal Oils, Fats, Chemicals, Vegetable Oils,

Every raw material necessary for the manufacture of soap and allied products is carried in stock and is available at the right price for immediate delivery to your door.

PALMITIC ACID
90-95% Pure White, High Melting Point

GLISYN
Inquiries solicited on this low price glycerine replacement.

ALCOHOL
AMMONIA
BLEACHING POWDER
BORAX
BICARBONATE OF SODA
CARBON TETRACHLORIDE
CALCIUM CHLORIDE
CAUSTIC SODA
CAUSTIC POTASH
DYES
DISODIUM PHOSPHATE
GLAUBER'S SALTS
GLYCERINE
METASILICATE
OXALIC ACID
POTASSIUM CARBONATE
SAL AMMONIAC
SALT
SAL SODA
SILICATE OF SODA
SODA ASH
TRISODIUM PHOSPHATE

CASTOR OIL
COCOANUT OIL
CORN OIL
COTTONSEED OIL
LARD OIL
NEATSFOOT OIL
OLEIC ACID - RED OIL
OLIVE OIL
OLIVE OIL FOOTS
PALM OIL
PALM KERNEL OIL
PEANUT OIL
RAPESEED OIL
ROSIN
SALAD OIL
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NEWS

Offer New Household Cleaner

"Soyasoap," a new household cleaning preparation for use on painted, varnished, waxed or lacquered surfaces, manufactured by Great Lakes Varnish Works, Chicago, was introduced to Chicago housewives in large newspaper display copy April 17. Directions call for use of one spoonful of the powdered preparation in a gallon of water. In addition to household use it was also recommended for automobile cleaning. A one-pound can, regularly priced at 25 cents was offered for 10 cents in the introductory offer.

C-P-P Loses Tax Refund Suit

Suits against the United States for recovery of nearly $2,000,000 of manufacturing processing taxes paid by Colgate-Palmolive-Peet Co., Jersey City, were recently dismissed at the Federal District Court in Wilmington, Del. The company alleged that the taxes were collected illegally for the processing of oil.

New "Soilax" Dispenser

Economics Laboratory, Inc., St. Paul, Minn., has just brought out a new colorful plastic container designed for dispensing its "Soilax" cleaning compound for general household use.

P & G Head Speaks on Defense

Speaking before the Covington, Ky., Chamber of Commerce recently, R. R. Deupree, president of Procter & Gamble, Cincinnati, and chief of materials, agriculture, forest and products division of the Defense Commission, made the following statement: "This national defense effort is of the greatest magnitude. It is my opinion that production is being handled in a sane and sensible manner and I can see no muffing of the ball in the program."

The speaker described production activities connected with the national defense and discussed the organization and procedure of the defense measure. Stated Mr. Deupree, "What is being done is being done intelligently—a job is being done that you will be proud of—we ought to be thinking of sacrifices which all of us ought to make—it falls on us to make these sacrifices."

R. R. DEUPREE

Resigns as Canco Chairman

Henry W. Phelps, associated with American Can Co., New York, since its formation in 1901, resigned recently as chairman of the board of directors. Mr. Phelps will continue in an advisory capacity.

F. H. Ungerer Recovering

F. H. Ungerer, president of Ungerer & Co., New York, perfuming materials, is recovering from an operation in Doctors' Hospital, New York. His condition is said to be satisfactory.

New Savogran Powder Cleaner

"Coldfoam," a soapless soap powder for general cleaning, has just been brought out by Savogran Co., Boston. One pound, which sells for 20 cents, is said to make 40 gallons of cleaning solution.

Perfect Heads Zoned Soap Co.

Frederick E. Perfect was recently elected president of the newly-formed Zoned Soap Co., Ft. Wayne, Ind., succeeding Homer F. Fry who resigned to become chairman of the board. Other officers are T. LeRoy Marks, vice-president; Axel P. Holton, secretary-treasurer, and Walter E. Helmke, counsel. The board also includes Austin M. Bearhs, Otto H. Buesking, J. C. Morgenthaler, Philip Clauss, Ensil Martens, and Max Finger. The board announced the selection of A. H. Perfect & Co. as national bulk distributors.

Soap Prices Raised 4%

Procter & Gamble Co., Cincinnati, recently increased wholesale prices of major soap and shortening products by approximately four per cent, the first general price advance since September, 1939, according to newspaper reports.

Radio Program for "Palmolive"

Colgate-Palmolive-Peet Co., Jersey City, is presenting a five-a-week daytime radio serial, "Bess Johnson," for "Palmolive" soap over sixty stations.

Iowa Soap Appoints Agency

Iowa Soap Co., Burlington, Iowa, recently named James G. Lamb Co., Philadelphia, advertising agency, for a radio test in the East.

Discuss Army Packaging Rules

Soap manufacturers, in common with other industrialists, are finding difficulty in meeting packaging specifications for the products they are supplying the army and navy, according to revelations at the American Management Association's packaging conference at the Stevens Hotel, Chicago, April 1 to 4.

Reporting on a survey, conducted by the Association, A. H. Luhrs, president of Container Testing Laboratories, Inc., New York City, pointed out that certain types of containers which are generally suitable for commercial use, are unsatisfactory when subjected to the added demands of the armed forces. Not only are such articles subjected to repeated re-shipment, with abuse in re-handling, but to terrific heat, intense cold and excessive dampness, he said.

As a result of the survey many manufacturers have recommended a change in the type of shipping containers now specified by army and navy procurement divisions for these products. Among the specific instances of suggested changes Luhrs listed one from an unidentified soap manufacturer who complained that government wooden box specifications are usually heavier than this company would normally use. Their boxes have sides, top and bottom of 5/16th inch boards and ends 5/8th inch, whereas the government specifications require 5/8th inch sides, top and bottom and 3/4 inch ends. On the whole, however, the Management Association's survey committee, found that "great strides have already been made in improving and amplifying the packaging of defense materials."

Another speaker at the packaging conference, Mrs. Wilbur E. Fribley, president of the Chicago Housewives League, offered a suggestion worth pondering by designers of soap and cosmetics packaging materials.

"A check of any bathroom cupboard," she said, "will show the utter indifference of manufacturers to the matter of convenience of storage or use of the cupboard shelves. These shelves are extremely narrow and not high. The most likely location is right over the porcelain wash basin. Many products are sold in containers which are breakable and whose shape is such that it is almost impossible to hold them in a wet hand. Others topple at the least touch. Tops are difficult to remove. Many drip at the pouring lip. The variety of shapes makes them difficult to arrange efficiently on shelves. Is it any wonder that consumers are always switching brands in their hunt for efficient containers?"

New Marshall Field Soap Line

Marshall Field & Co., Chicago retail department store, introduced a new line of soap flakes and household cleaning materials packaged under their own "Marshall Field" private label, during a "Spic 'n' Span Week" promotion April 14 to 19. Included in the offering was "Marshall Field" milled soap flakes, for fine fabrics, packaged in 13 oz. cartons, attractively designed in blue and white, and "Marshall Field" soap flakes for clothing and dishes in 22 oz. packages with green and white colors. The third soap item is a large white floating laundry bar. Other items featuring the "Marshall Field" label include furniture polish, paste wax, "no-rubbing" floor wax, metal polish, window cleaner and paste cleaner. Advertising copy stresses economy. Both soap flakes are offered in a case of 24 for $3.25 and the floating bars in a case of 48 for $2.95.

Michigan Alkali Names Taylor

Irving H. Taylor, who has been identified with the alkali industry for 27 years, has just been elected vice-president in charge of sales of Michigan Alkali Co., with headquarters in New York. Mr. Taylor is president of Merchants Chemical Co. of New York, a former chairman of the board of United States Alkali Export Association, Inc., and a former president of International Carbonic, Inc.

British Restrict Soap Making

As a result of restrictions imposed in Great Britain, many retailers of toilet products are now engaging in the manufacture of various soap products and other toilet preparations to replace those which they are now unable to obtain from their former suppliers. It has been made illegal, however, for any person to supply such goods of his own manufacture who was not engaged in supplying goods made by him prior to July 23, 1940, unless he obtains a special license.

A.O.C.S. To Meet May 15-16

The annual Spring convention of the American Oil Chemists' Society will be held at the St. Charles Hotel in New Orleans, May 15 and 16. Among the outstanding papers which will be presented at the meeting are the following: "Unsaponifiables," by H. A. Schuette, University of Wisconsin; "The Production and Utilization of Carnauba Wax," by J. Vernon Steinle, of S. C. Johnson & Co.; "The Indian Vegetable Oil Industry," by J. G. Kane, University of Bombay; "The Composition and Yield of Crude Liquids Obtained from Soybeans by Successive Solvent Extraction," by W. C. Bull and T. H. Hopper, of Regional Soybean Laboratory; "Pilot Plant Production of Fatty Acid Derivatives," by Ralph H. Potts, of Armour & Co.

The annual golf tournament and other entertainment are to be under the direction of J. J. Ganucheau. Before the election of officers, members are requested to submit suggestions to the nominating committee, — A. S. Richardson, chairman, Procter & Gamble Co., Ivorydale, Ohio; E. H. Harvey and H. P. Trevithick, of the New York Produce Exchange.

Name Tom C-P-P Dallas Mgr.

R. A. Tom, formerly San Antonio district supervisor for Colgate-Palmolive-Peet Co., Jersey City, was recently made manager of the southwestern district soap division of the company with headquarters at Dallas, Texas.

Lever Bros., Procter & Gamble In Suits Over "Ivory" and "Swan"

TWO suits involving Procter & Gamble Co. and Lever Bros. Co., based on a conflict of interests in the manufacture and merchandising of Lever's new "Swan" soap and P & G's new "Ivory" have been brought into the courts within the past few weeks. The first suit was brought on February 27th in the Federal District Court at Baltimore by Lever Bros. Co. against Procter & Gamble, alleging infringement of the Bodman Patent (U. S. No. 2,215,529) under which Lever's newly announced "Swan" soap is made.

On April 3 Procter & Gamble filed suit against Lever Bros. in the Federal District Court at Cincinnati for alleged unfair competition, based on claims that "Swan" resembles "Ivory" in size, design, color, odor and floating properties, and that Lever's advertising and merchandising policies have been such as to confuse the purchaser. Preliminary and permanent injunctions are asked against manufacture or sale of "Swan" soap in its present form, as well as damages and an accounting of profits.

The Bodman patent, which is the basis of the Lever suit against P & G was applied for in the name of John W. Bodman, Lever research director, Sept. 24, 1940. It is stated to be a continuation of a previous application filed April 8, 1933, Serial No. 665,063. It covers an improved process for the manufacture of a floating soap for which many of the advantages of a milled soap are claimed. The process, says the inventor

"Is capable of producing an improved soap product having to a superior degree the firmness and fine texture of milled soap, but with minute air cells or bubbles uniformly distributed throughout the soap mass so as to produce a floating soap. It may also be applied to improve the water receptive and adsorptive properties of the soap by reducing them to the lowest degree compatible with free lathering.

"My process may be carried out to produce a bar or cake of the new floating soap of novel structural and other characteristics more nearly resembling a milled soap than a framed soap, in that it may possess some characteristics similar to those of the finest milled soaps, such as firmness, fine grain or texture, smooth "feel" to the fingers, and ability to retain the more volatile perfumes, and does not warp on aging and drying. Unlike milled soap it floats, and furthermore may be distinguished from milled soap in having a continuous body and a uniform dispersion of fine voids throughout the mass."

The new process, says the application, may begin at any point in the history of the soap stock after saponification. It may be applied equally well to settled kettle soap, semi-boiled or cold-process soap. In its essence the process seems to consist of reducing the soap stock to semi-fluid condition, and then intensely agitating it in an enclosed chamber under the influence of heat and pressure. The air bubbles are said to be distributed uniformly through the body of the soap, giving superior smoothness and texture, and producing a cleaner break. Other important claims are that when immersed in water only a relatively thin surface layer of the new soap becomes softened; and that when left on the washstand, it does not become soft and slimy at the point of contact. Says the inventor

"For the first time in the art of manufacturing soap, so far as I am aware, there has been produced a floating soap which has all the qualities and properties which render milled soaps superior to framed soaps, such as fine grain or texture and the ability to retain the more volatile perfumes."

In the Lever suit, Procter & Gamble are charged with infringement of the Bodman patent, presumably in the manufacture of the new type "Ivory" brought out last year.

The Procter & Gamble suit is for unfair competition, and charges that "Swan" is an imitation of "Ivory" in size, design, color, odor and floating properties. Particular exception is taken to a claim made in recent Lever advertising that "Swan" is "the first really new white floating soap since the Gay Nineties." Complaint is also made against the failure of Lever Bros. to identify itself as the manufacturer of "Swan" soap, thereby causing confusion in the public mind as to its origin. The suit asks that Lever Bros. be enjoined from making or selling any soap embodying two or more of a long list of characteristics claimed for "Ivory" soap.

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Salesmen To Hear Killheffer

Dr. Elvin H. Killheffer, of the legal department of E. I. DuPont de Nemours & Co., Wilmington, Del., is to be the guest speaker at the May 13 luncheon meeting of the Salesmen's Association of the American Chemical Industry at the Chemist's Club, New York.

A change has been made in the golf tournament schedule of the Salesmen's Association. The June 10th tournament will be held at the Bonnie Briar Country Club, Larchmont, N. Y., instead of at the Wingfoot Country Club. The July 8th tournament, as previously announced, will be held at the Plandome Golf Club, Plandome, N. Y. The August 12th meeting is to be at Montclair Golf Club, Montclair, N. J.

Buckwood Inn, Shawnee-on-the-Delaware, Pa., is to be the site of the special 20th Anniversary Outing planned for September 5th, 6th and 7th, the golf tournament being scheduled for Saturday, the 6th.

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Denby To N. Y. Dreyer Office

George T. Denby, former St. Louis representative of P. R. Dreyer Inc., New York, is now located in New York and will contact the trade in the metropolitan area.

U.S.I. ALCOHOL NEWS

May ★ A Monthly Review of Technical Developments for Chemists and Executives ★ 1941

ALCOHOL IN HAIR PREPARATIONS

Brilliantines help to create a well-groomed appearance by keeping the hair in place. Both oily and non-oily types of brilliantine may be formulated with the aid of alcohol.

Brilliantines, Other Products Use Alcohol to Good Advantage

Desirable properties of alcohol are utilized in a wide variety of hair preparations. In brilliantines of the oily type, for example, alcohol serves to lower the viscosity of the mixture and obtain more uniform distribution of the oily ingredients, it is reported. Non-oily brilliantines, which keep the hair in place without producing excessive luster, can be formulated with glycerin, alcohol, and water.

In shampoos, the fat-solvent properties of alcohol produce more thorough cleansing, and in addition the alcohol contributes valuable antiseptic characteristics.

U.S.I. produces S.D. Alcohol in all the formulas authorized for use in shampoos and other hair and scalp preparations. Denaturants used in these formulas are selected with extreme care.

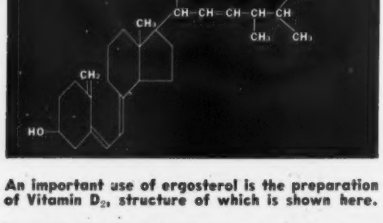
U.S.I. MAKES CHANGES IN PRODUCT NOMENCLATURE

As a step to promote simplicity and uniformity in the nomenclature of chemical products, U.S.I. is adopting revised names in accordance with the A.C.S. system, for many of its products. A complete list of the revisions appears in the May issue of U.S.I. CHEMICAL NEWS, a copy of which will be sent on request.

RAISES STEROL YIELD BY EXTRACTION WITH BUTANOL

Sterols of high purity can be extracted from yeasts, molds, and similar organisms by the aid of butanol (normal butyl alcohol), it is claimed in a recent patent. The process is said to result in a high yield, and to be especially suitable for extracting ergosterol.

The method is described as consisting essentially of separating the fat in the yeast, treating with butanol, and saponifying the fat. The butanol is said to accelerate the saponification and to simplify the separation of the soap from the sterol.



An important use of ergosterol is the preparation of Vitamin D_2, structure of which is shown here.

TECHNICAL DEVELOPMENTS

For further information write U.S.I.

An emulsifying agent is described as an edible liquid especially suitable for food products, pharmaceuticals, mouth washes, and other products. It is said to be soluble in alcohol. **(No. 450a)**

Replacement of indole is possible with a new product that is said to be superior in lasting quality and perfume value. **(No. 451a)**

A new chemical, prepared in crystal form, is said to have an odor resembling raspberries, and to be suitable for use in face powders. Crystals are alcohol-soluble. **(No. 452a)**

Product protection against contamination from perspiration is said to be afforded by a colorless solution that dries to form an invisible film. **(No. 453a)**

Cyclamen alcohol gives a lighter, fresher fragrance than the aldehyde, permits broadening the use of the popular cyclamen note, it is claimed. **(No. 454a)**

Collapsible tubes for drugs and toiletry articles can be lacquered on their inner surfaces by a new machine incorporating an automatic spray gun, it is reported. **(No. 455a)**

Vitamin capsules are filled with a high degree of precision by a new machine, it is said. While the machine is not being rented or sold, the maker will encapsulate raw materials sent to him, or will supply both raw materials and capsules. **(No. 456a)**

CLAIM HIGH SOLUBILITY FOR NEW SULPHANILAMIDE PRODUCT

A novel reaction product of sulphanilamide, characterized by stability, high solubility, and low toxicity, can be prepared with the aid of S.D. Alcohol 3-A, it is claimed in a recent patent.

A typical procedure is said to consist of adding about 8.6 grams of sulphanilamide and 7.7 grams of sodium formaldehyde sulphoxylate to 100 cc. of the alcohol, and then heating. It is believed that the alcohol may serve as a catalytic agent in forming the reaction product.

The new product is reported to have a solubility of over 10% in water at room temperature. The solutions, it is claimed, are relatively stable and free from crystallization even when exposed to air for several hours, and the solid product itself is also sufficiently stable to be put up in tablet form.

Although the alcoholic medium must possess dehydrating characteristics, it is not essential that it be employed in anhydrous form. 190-proof S.D. Alcohol 3-A is said to be entirely suitable.

The exact chemical structure of the new reaction product has not been determined.

U.S.I. INDUSTRIAL CHEMICALS, INC.
60 EAST 42ND ST., NEW YORK USI BRANCHES IN ALL PRINCIPAL CITIES
INDUSTRIAL ALCOHOL IN ALL GRADES AND ALL FORMULAS

Expand "White Sail" Line

Great Atlantic & Pacific Tea Co. is now offering seven household cleaning and laundry items under their private "White Sail" brand label. Following introduction of "White Sail" soap grains for tub, washer and dishes in February, came "White Sail" soap flakes for fine laundering, offered in 12½ oz. packages at 10 cents. This was succeeded by "White Sail" cleaner for scouring and polishing at three cans for 10 cents and then a "White Sail" bleach and deodorant in quart bottles at 10 cents. Other items in the line also include a laundry starch, bluing and ammonia.

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Talks on New Armour Soaps

The development of two new household soaps utilizing domestic oils produced by Armour & Company's new fractional distillation process, was reported at the recent 7th annual conference of the National Farm Chemurgic Council in Chicago. "These soaps," said, D. M. Flick, manager of Armour Soap Works, "were made from a combination of fatty acids which would give them their greatest detergency and then compared in tests against similar type soaps made from blended and natural fats and oils."

Lantern slides were used to show the detergent effect of three soaps formulated for fine laundering on standard soiled samples. Two were washed with well-known, generally accepted, high-grade soaps made from blended natural fats and oils, while the third sample was washed with the new soap product made from fractionated fatty acids. The detergency results of this third sample, he pointed out, were "obvious."

Among other new developments of interest to soap makers was the revelation that lavender oil of superior quality for scenting soap, is now being produced from American-grown plants. Dr. Paul Kolachov, director of research and development for a Louisville, Ky., distillery, who reported this achievement, said the plants are being cultivated in a commercial nursery at Scottsville, Texas. Analyses were run on lavender flowers from this source, he reported, with results comparing very favorably with the standard English lavender from the Mitcham district, especially in fragrance. Twice as much essential oil was present in the Texas sample, actual figures being 4.1 to 2.1 per cent, he reported. The refractive index was identical, while other physical and chemical data were comparable.

These results, he contended, "show the definite possibility of obtaining a satisfactory lavender oil in America, comparable to imported supplies." He urged encouragement of this project to make our market independent of foreign products.

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Unilever Directors Retire

H. R. Greenhalgh, a member of the board of directors of Lever Brothers and Unilever, Ltd., London, for the past twenty-five years and vice-chairman for twenty years, has just resigned for reasons of health, according to an announcement from the board. Albert Van den Bergh and C. E. Tatlow also resigned on reaching the age of retirement. They both become advisory directors. Clement Davies, M. P., has resigned in order to devote more time to public work but is retaining his connection with the company as adviser on legal matters. As a result of these resignations, G. Heyworth has been elected vice-chairman of the board and R. E. Huffman and R. G. Jurgens have been appointed directors. J. W. Pearson has relinquished his position as advisory director.

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Check Use of "English" Names

John J. Tracey Co., Chicago, was recently ordered by the Federal Trade Commission to discontinue use of the word "English" or other similar words to describe soaps not made in England. The company, it is alleged, represented that its soaps, which are made in the United States, were of English origin by use of the names "English Lilac," "English Honeysuckle," etc.

Bon Ami Earnings Down

Net profit of Bon Ami Co., New York, and subsidiaries for the quarter ended March 31, was $325,025, equal to $1.56 a Class A share and 89 cents a Class B share. For the quarter ended March 31, 1940, earnings were $340,046, or $1.63 a Class A share and 92 cents a Class B share.

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MM&R Moves Chicago Office

The Chicago office of Magnus, Mabee & Reynard, Inc., New York, was recently moved to a new address at LaSalle-Wacker building, 221 N. LaSalle St.

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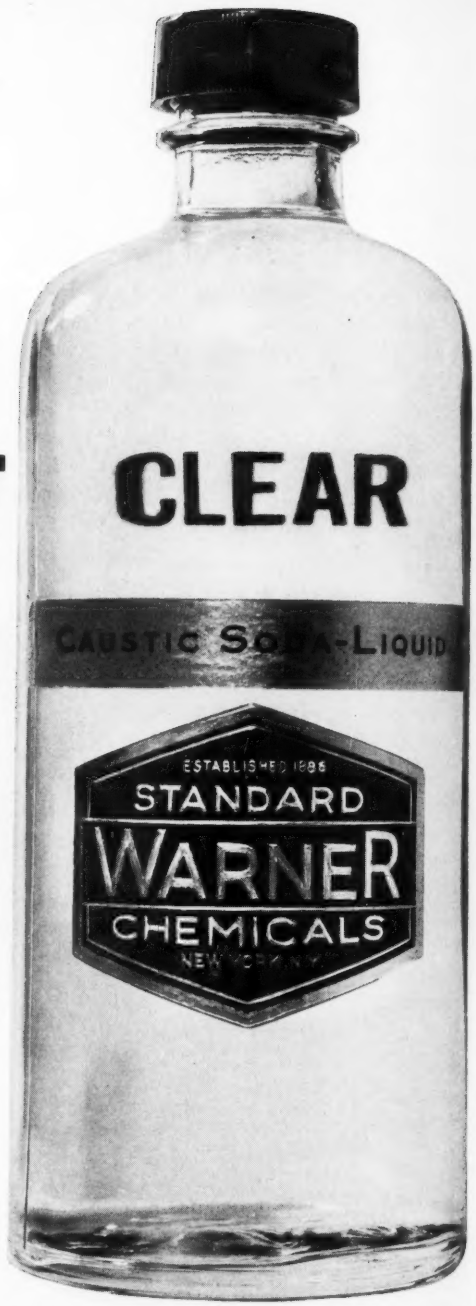
C-P-P 1940 Profits Off

Colgate - Palmolive - Peet Co., Jersey City, just reported a net profit for 1940 of $4,044,760, or $1.72 a common share excluding foreign income, against $6,632,655 including income from foreign subsidiaries, or $2.74 a share in 1939. Profits or dividends from English and continental European subsidiaries totaled $1,136,670 last year and this was added to reserve. The reported 1939 profits included $1,177,336 of foreign earnings and deducting this, the 1939 profit would have been $5,455,319, or $2.14 a common share, president E. H. Little reported.

Net profits from domestic operations in 1940 were $3,036,552 on net sales of $75,024,221 as against $4,554,831 on sales of $76,767,480 in 1939. The results last year were affected by the rise in domestic income tax and other increased expenses, the report stated.

Mr. Little reported that all European subsidiaries are still in operation although many are subject to severe governmental regulation. In some countries production of regular branded merchandise has been prohibited, he said. The company has suffered no physical damage or physical loss, he added, with the exception of damage by bombing to its London office and toilet article manufacturing plant. Operations have been resumed, however, and the financial loss was reported as not great.

WE MAKE IT CLEAR



Low in salt, low in iron, low in turbidity, Warner Caustic Soda gives excellent results wherever a high-quality caustic soda is required. Yet for all its high-quality and crystal clarity, Warner Caustic Soda costs no more than regular production-grade electrolytic caustic soda.

Warner Caustic Soda is furnished in standard 50% and 70% concentrations — as well as in 73% concentration shipped in specially lined tank cars. Also flake or solid. Why not order a car for prompt shipment?

WE INVITE INQUIRIES ON WARNER CAUSTIC SODA AND WARNER TETRA SODIUM PYROPHOSPHATE

Acid Sodium Pyrophosphate
Phosphoric Acid
Sodium Phosphates
Liquid Caustic Potash
Chlorine Liquid
Sulfur Chloride

Trichlorethylene
Barium Carbonate
Perchlorethylene
Carbon Bisulfide
Sodium Sulfide
Bromine

Blanc Fixe
Carbon Tetrachloride
Epsom Salt
Hydrogen Peroxide
Alumina Hydrate, Light
Chemical Grade Magnesia

CHEMICAL WARNER COMPANY

DIVISION OF
WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

Asks Laundry Supervision

The use of more efficient sanitary methods and germicides in laundries was urged by Earnest O. Gillam, president of Gillam Soap Works, Ft. Worth, Texas, in a recent statement to the *Texas Citizen*, Ft. Worth newspaper. "Laundries should be under the supervision of the State Health Department," said Mr. Gillam, "subject to periodical inspection and allowed to operate only by a permit issued by the State. In that way only can the health of customers of laundries be safeguarded. Workers in laundries should be required to have regular medical examinations, the same as barbers, beauty operators and food handlers."

During the last three months, more than a million pounds of soap have been manufactured for the United States Army by Gillam Soap Works.

History of Michigan Alkali

In commemoration of the fiftieth anniversary of the founding of Michigan Alkali Co., a 122-page book "Salt of the Earth" has just been brought out which tells the story of Captain J. B. Ford, founder of the company, and recounts the company's history. The author, Arthur Pound, tells the story in an interesting readable style and includes many human anecdotes about the pioneers in the alkali industry.

Extract Coffee Oil for Soap

A method for extracting oil from coffee beans, which is said to be successful, was recently developed by M. E. Gavatin, a Swedish engineer. The oil, present to the extent of 10 to 16 per cent in the bean, is extracted by bursting the cells of the bean. Previously developed methods of extracting coffee oil for the manufacture of soap have used organic solvents.

Name Tribble M. M. & R. V.-P.

Talmadge B. Tribble, for the past three years general manager of the Mid-Western area for Magnus, Mabee & Reynard, Inc., New York, was recently elected vice-president in charge of the Mid-Western area. He continues as general manager with headquarters in Chicago. Under Mr. Tribble's direction, the company's facilities in Chicago and surrounding territory have been expanded for the third successive year.

T. B. TRIBBLE

M. H. Fairchild Head Dies

Meridith H. Fairchild, 68, president of M. H. Fairchild & Bros., Inc., Chicago soap manufacturers, died recently in Chicago. He had been connected with the soap industry in Chicago for more than fifty years. He leaves his widow, Maud, a son, Meridith, Jr., and five brothers.

Dreyer Opens Boston Office

P. R. Dreyer Inc., New York, is opening a New England branch office in Boston, to be in charge of F. O. Snyder who is well known in essential oil circles in Cincinnati and Chicago areas. Mr. Snyder will make his headquarters at the Rice Building, 10 High St.

C-P-P Distributes Free Coupons

In a Spring campaign to stimulate sales of "Peet's" granulated soap and "Super Suds," the Berkeley, Cal., branch of Colgate-Palmolive-Peet Co., Jersey City, distributed from door to door in California cities circulars with coupon attached worth ten cents on the purchase of a large size package of these two products.

C-P-P Chi. Sales Conference

Sales managers and fieldmen of the Colgate-Palmolive-Peet Company, operating out of the Chicago, Cleveland, Cincinnati, Detroit and Minneapolis offices held their annual sales conference in Chicago, March 29. Sales promotional plans and new advertising for "Palmolive" soap were discussed. Marcus Marlin, Chicago divisional manager of soap sales, was in charge, assisted by J. Hillman, Chicago district manager. From Jersey City headquarters came also J. A. Reilly, sales manager, and Breckenridge Jones, assistant sales manager of the soap department and two representatives of the advertising department, R. E. Healy and H. McKay. Salesmen were told at the conference that supplies of olive oil for soap, on hand now in the United States, are sufficient to last until the first of next year, even though no more imports pass through the blockade from Greece, Italy, Spain and Africa.

Pioneer Features Soap Items

Three articles of interest to soapers appear in the April issue of the *Pioneer*, monthly magazine of Electro Bleaching Gas Co. and Niagara Alkali Co., New York, entitled "Need for Imported Soap Oils," "Mexican Palm Oil Provides Satisfactory Soap Oil" and "Electron Microscope Reveals Soap Consists of Bundles of Fibres."

Shulton Display Contest

A third annual Father's Day window display contest featuring men's toiletries is being conducted by Shulton, Inc., New York. The contest which is open to all stores carrying "Early American Old Spice" men's toiletries, offers two awards of $300, two awards of $200, two of $100 and twenty $10 prizes. Contest closes July 1.

Western Soap Co. Moves

Western Soap Co., Vancouver, B. C., Canada, recently moved to larger quarters at 1814 Pandora St. Former address was 1624 Franklin St.

GERANIUM ALGERIAN SYNTHETIC

A PRODUCT OF IMMEDIATE INTEREST TO SOAPMAKERS

USE of this timely substitute for genuine Algerian Geranium Oil will enable soap manufacturers to duplicate closely the valued odor effect of natural geranium at a cost well within the limits of practical economy. It will go a long way toward maintaining that level of quality formerly attained only through the use of genuine oils.

Our laboratories have developed several grades of GERANIUM ALGERIAN SYNTHETIC to meet the varying needs of individual manufacturers and we shall be glad to submit samples of these upon request. As this is a replacement oil of real merit, may we suggest the advantage of investigating its possible application to **your** product **without delay!**

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J AND SEILLANS (VAR) FRANCE

A FRITZSCHE PRODUCT for EVERY PURPOSE . . .

ESSENTIAL OILS . . The FRITZSCHE label on your Essential Oil container is an absolute guarantee of purity and complete conformity to the highest standards. These basic materials are the finest that modern methods and experience can produce.

AROMATIC CHEMICALS . . . For finer aromatic effects and greater economy, choose your chemical requirements from this large and superlative selection of materials.

FIXATIVES . . . Timely now are our four Artificial Animal Scents—Musk, Civet, Castoreum and Ambergris, all especially adaptable to soap making. Our complete line includes, also, Rose Crystals —one of the best fixatives for all-around use.

ANTI-OXIDANTS . . . Developed for the preservation of soaps, animal and vegetable fats and oils, these materials are highly important to the soap manufacturer. Write us for details concerning Oxidex.

BATH SALT PERFUMES . . These materials, combining both perfume and color, greatly facilitate the process of manufacture. Write for circular describing our Bath Perstels and giving complete list of perfume-color blends.

INSECTICIDES AND DISINFECTANTS . . . Some of our most important research achievements have been in this field of investigation. All materials listed in our catalog and recommended for these purposes have behind them guarantees of experience and the indisputable tests of time.

DEODORIZING COMPOUNDS . . . Write us for circulars describing Neutroleum, Javollal, Methalate "C", Safrella and other important deodorizing compounds of proven effectiveness.

TOILET SOAP COMPOUNDS . . . Many new and important toilet soap perfumes have been added to our already extensive line. These provide exquisite odor quality at very low cost. Ask us for particulars.

LIQUID SOAP AND SHAMPOO PERFUMES . . . Being highly soluble and mixing readily with liquid soaps, these special perfume blends are easy to use and low in cost.

DENTAL AND ORAL FLAVORS . . These flavoring specialties are skillfully blended to produce pleasant, clean, refreshing taste effects. We are prepared, also, to create flavor blends to meet your own specifications and costs. Please feel free to consult us.

SEND FOR **SAMPLES**

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

New Scottish Factory For Coty

Coty's, Ltd., British subsidiary of the French toilet products concern, has started construction of new works at Beith, Ayrshire, Scotland, which will be extended to take over the production of a large number of articles for the company's export trade. Toilet and shaving soaps will be among the products manufactured. Several other concerns are negotiating for factories in Western Scotland in accordance with a policy of decentralization and comparative safety from air raids.

Chicago Assn. Elects Scott

The Chicago Drug and Chemical Association elected John A. A. Scott, of Merck & Co., as president for the 1941-42 term, at the annual meeting March 27. For vice-president M. F. Charley of Standard Pharmacal Co. was chosen, while Gerald F. Pauley of Monsanto Chemical Co., became secretary and F. Dean Hildebrandt of Prior Chemical Corp. became treasurer. The following new directors were also elected: C. M. Black of S. B. Penick & Co.; Wilson I. Doan of Dow Chemical Co.; T. J. Glenn of Murine Co.; Irwin E. Smith of Victor Chemical Works, and Walter R. Nay, Mallinckrodt Chemical Works.

Proprietary Ass'n To Meet

The regular annual meeting of the Proprietary Association will be held at the Biltmore Hotel, New York, May 12th, 13th and 14th. A registration fee of $5.00 will be charged.

C-P-P California Campaign

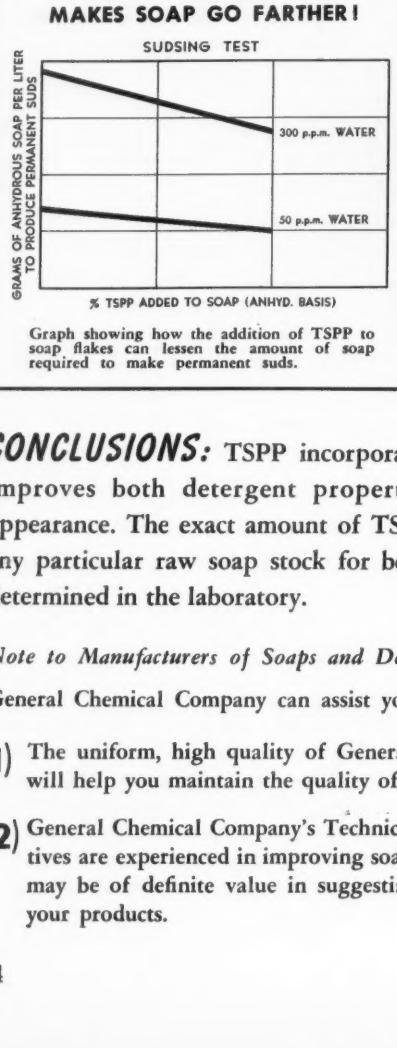
A free cake of "Crystal White" laundry soap was given away from door to door in interior California cities during a March campaign by the Colgate-Palmolive-Peet Company, of Berkeley, Calif. With each cake of soap distributed was included a certificate good for still another free cake of "Crystal White" with the purchase of two cakes of the same.

GENERAL CHEMICAL COMPANY *TSPP* INCREASES SOAP FLAKE DETERGENT EFFICIENCY!

Tests Show That When General Chemical ***TSPP*** *is Incorporated in Soap Flake Formulation The Following Improvements Result:*

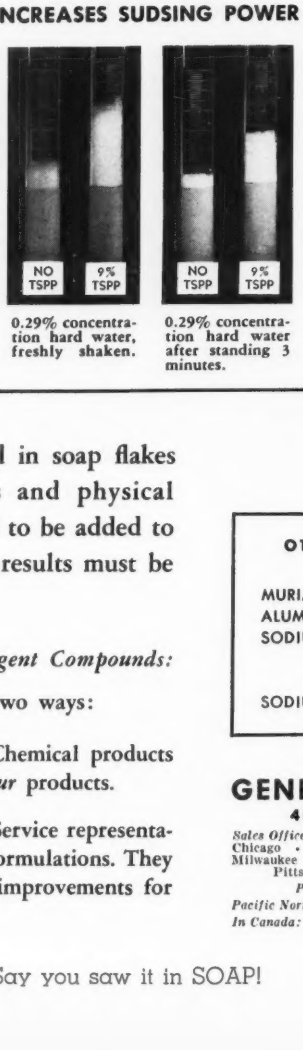
● INCREASES DETERGENT EFFICIENCY ● IMPROVES APPEARANCE OF THE PRODUCT ● BOOSTS SUDSING POWER ● REDUCES THE AMOUNT OF SOAP FLAKES REQUIRED TO MAKE PERMANENT SUDS. ⬇ *See Test Results Below:*

GENERAL CHEMICAL TSPP MAKES SOAP GO FARTHER!


SUDSING TEST
GRAMS OF ANHYDROUS SOAP PER LITER TO PRODUCE PERMANENT SUDS
300 p.p.m. WATER
50 p.p.m. WATER
% TSPP ADDED TO SOAP (ANHYD. BASIS)

Graph showing how the addition of TSPP to soap flakes can lessen the amount of soap required to make permanent suds.

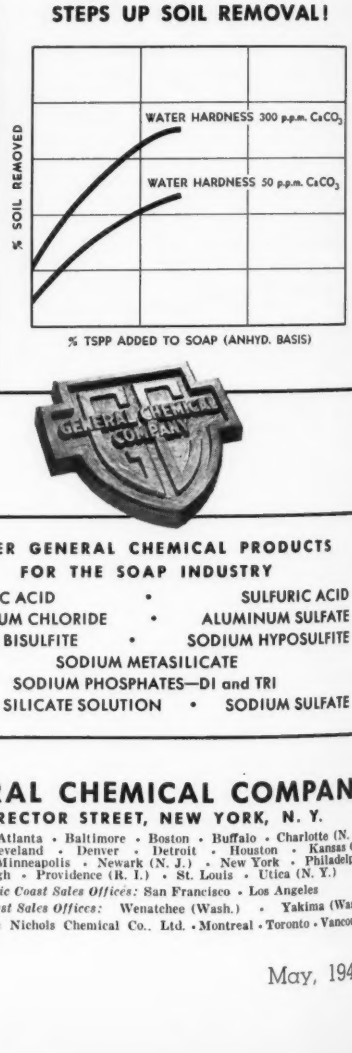
GENERAL CHEMICAL TSPP INCREASES SUDSING POWER!



0.29% concentration hard water, freshly shaken.

0.29% concentration hard water after standing 3 minutes.

GENERAL CHEMICAL TSPP STEPS UP SOIL REMOVAL!



CONCLUSIONS: TSPP incorporated in soap flakes improves both detergent properties and physical appearance. The exact amount of TSPP to be added to any particular raw soap stock for best results must be determined in the laboratory.

Note to Manufacturers of Soaps and Detergent Compounds:

General Chemical Company can assist you two ways:

(1) The uniform, high quality of General Chemical products will help you maintain the quality of *your* products.

(2) General Chemical Company's Technical Service representatives are experienced in improving soap formulations. They may be of definite value in suggesting improvements for your products.

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MURIATIC ACID • SULFURIC ACID
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SODIUM BISULFITE • SODIUM HYPOSULFITE
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SODIUM SILICATE SOLUTION • SODIUM SULFATE

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Pacific Coast Sales Offices: San Francisco • Los Angeles
Pacific Northwest Sales Offices: Wenatchee (Wash.) • Yakima (Wash.)
In Canada: The Nichols Chemical Co., Ltd. • Montreal • Toronto • Vancouver

CONTRACTS AWARDED

Laundry Soap Awards

The following awards were made in a recent opening by the Army Quartermaster Corps, Ft. Mason, Calif.: Pioneer Soap Co., San Francisco, 80,040 lbs. laundry soap at 3.62c; Colgate-Palmolive-Peet Co., Berkeley, Calif., 420,000 lbs. at 3.647c and Newell-Gutradt Co., San Francisco, 200,040 lbs. at 3.5c.

Army Quartermaster Awards

In a recent opening by the Army Quartermaster Corps, Jeffersonville, Ind., Colgate-Palmolive-Peet Co., Jersey City, was awarded a contract for 10,000 lbs. powdered soap at 6.12c. In the same opening International Agricultural Corp., Chicago, was awarded a contract for 12,000 lbs. trisodium phosphate at $2.75 cwt.

Treasury Dept. Bids

Chas. W. Young & Co., Phila., was low bidder on a quantity of laundry soap at $6.10 C., in a recent opening by the Treasury Dept., Procurement Div., Washington, D. C.

Printing Office Bids

Harley Soap Co., Phila., was low bidder on 220 gals. non-corrosive cresol at 95c gal., in a recent opening by The Government Printing Office, Washington, D. C.

Cresol & Soap Awards

In a recent opening by the Army Medical Corps, Bklyn., the following contracts were awarded: Harley Soap Co., Phila., 2,500 drums saponated cresol solution at $3.965, 1,000 drums at $4.20, 2,000 drums at $4.195 and 4,500 drums at $3.755; West Disinfecting Co., Long Island City, 2,500 bots. at 32.9c, 1,000 bots. at 34.4c and 5,500 bots. at 30.2c; Mickel & Pelton Co., Oakland, Calif., 1,000 bots. at 41c and 600 pails soft soap at $2.125; Kranich Soap Co., Bklyn., 25 bars hard soap at 28c, 250 bars at 29c, 800 bars at 29c, 8,700 bars at 27c.

Hypochlorite Award

The Army Quartermaster Corps, Chicago, recently awarded Penna. Salt Mfg. Co., Phila., a contract for 30,000 lbs. calcium hypochlorite at 23.7c.

Floor Wax Bid

Windsor Wax Co., Hoboken, N. J., was the low bidder on 1,000 lbs. paste floor wax at $99, in a recent opening by the Panama Canal, Washington, D. C.

Metal Polish Bid

In a recent opening, by the Panama Canal, Washington, D. C., Wonder Chemical Co., Bklyn., bid low on 5,760 cans metal polish at $385.34.

Medical Corps Award

In a recent opening by the Army Medical Corps, Bklyn., Calgon, Inc., Pittsburgh, was awarded a contract for 588 drums dishwashing compound at $17,551.80.

Laundry Soap Award

The Army Quartermaster Corps, Jeffersonville, Ind., recently awarded Minnesota Chemical Co., St. Paul, a contract for 40,000 lbs. powdered laundry soap at 11.2c.

Medical Corps Award

Crystal Soap & Chemical Co., Phila., was recently awarded a contract for 30,000 jars and 6,900 pails soft soap at $21,313.50 by the Army Medical Corps, Brooklyn.

Cresol & Soft Soap Award

Hockwald Chemical Co., San Francisco, was awarded a contract for 2,000 drums saponated cresol solution, U.S.P., at $9,500 and 1,000 pails soft soap at $2,060 in a recent opening by the Army Medical Corps, Ft. Mason, Calif.

Cresol Award

Lehn & Fink Products Corp., Bloomfield, N. J., were recently awarded a contract for 2,500 drums cresol saponated solution at $10,450 by the Army Medical Corps, Ft. Mason, Calif.

Change N. Y. Opening of May 7

A change has been made in the New York State division of Standards and Purchases bid opening of May 7 on group 201 relating to alkalies, soaps and tallows. The quantity of milled toilet soap, ½ oz. cakes, should be increased 1500 pounds, making a total for this size of 2285 pounds. The additional quantity is for delivery to Long Island State Park Commission, Babylon, L. I., N. Y.

Campaign for "Lifebuoy"

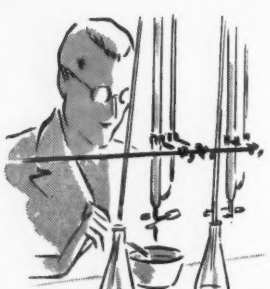
An advertising campaign for promoting the sale of "Lifebuoy" shaving cream in which two 25-cent tubes are offered for 33 cents is planned by Lever Brothers Co., Cambridge, Mass., through newspapers, network radio programs and broadcasts of the Brooklyn Dodgers baseball games.

P&G Workers Get Pay Increase

A pay increase of five cents an hour affecting approximately 1,400 workers at the Port Ivory, Staten Island, N. Y., plant of Procter & Gamble Manufacturing Co., was reported recently in newspaper accounts.

Hecker Products Income Up

Net income of Hecker Products Corp., Indianapolis, including dividends received from Best Foods, Inc., amounted to $341,814 for the quarter ended March 31, 1941, equal to 23 cents per share, as compared with $243,025, or 15 cents a share for the quarter ended March 31, 1940.



COMPARATIVE WASHING TESTS WITH ORDINARY SOAP BUILDERS CONFIRM THE SUPERIOR EFFECTIVENESS OF VICTOR TETRA SODIUM PYROPHOSPHATE

DETERGENT LABORATORY REPORT

WASHING TEST

CONCENTRATION 0.35% TEMPERATURE 140° F HARDNESS 400 ppm TIME 30 Min. AGITATION Regular

100% Soap	70% Soap 30% Soda ash	70% Soap 30% T.S.P.	70% Soap 30% 40° Silicate	70% Soap 15% Soda ash 15% T.S.P.P.
SUDS Trace	SUDS None	SUDS Trace	SUDS None	SUDS 1-1/2"
pH 8.9	pH 9.9	pH 9.4	pH 9.1	pH 9.6

DISCUSSION: Soil No. 10

THE improved washing effect that results from the use of tetra sodium pyrophosphate as compared with ordinary soap builders is strikingly demonstrated in the above test. Washing was done in water having a natural hardness of 400 ppm. The concentration of the soap mixture used was 0.35%; the temperature, 140°F. The cloth washed in the presence of Victor Tetra Sodium Pyrophosphate is unmistakably cleaner . . . yet no more soap was added than with the ordinary builders. May we send you a liberal sample for conducting your own tests?

VICTOR CHEMICAL WORKS, 141 W. Jackson Blvd., Chicago

VICTOR

HEADQUARTERS FOR... pHosphates

NEW TRADE MARKS

The following trade-marks were published in the April issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

VITALENE — This in outline letters describing engine solvent. Filed by Gray Co., Minneapolis, Feb. 13, 1941. Claims use since Feb. 3, 1939.

HEIRLOOM—This in solid letters describing silver polish. Filed by Oneida Ltd., Oneida, N. Y., Feb. 6, 1940. Claims use since Oct. 19, 1938.

SARO—This in solid letters describing cleaner. Filed by Clowood Co., Phila., Dec. 23, 1940. Claims use since Nov. 13, 1940.

MOTH-AWAY—This in solid letters describing insecticide. Filed by O-Cedar Corp., Chicago, May 31, 1940. Claims use since March 4, 1940.

PROTELA—This in solid letters describing textile mildew-proof. Filed by Albi Chemical Corp., New York, Jan. 25, 1941. Claims use since Jan. 10, 1941.

CLOPYROATE—This in solid letters describing boiler compound. Filed by Soproco, Inc., New Orleans, Jan. 28, 1941. Claims use since Jan. 7, 1941.

33—This in solid letters describing germicide. Filed by Beacon Chemical Co., Phila., Jan. 29, 1941. Claims use since Nov. 21, 1938.

PEAK BRAND—This in solid letters over drawing of mountain peak describing germicide. Filed by Farr Co., Greeley, Colo., Feb. 3, 1941. Claims use since May, 1939.

SERGEANT'S — This in solid and outline letters describing flea powder. Filed by Polk Miller Prods. Corp., Richmond, Va., Feb. 4, 1941. Claims use since Jan. 6, 1941.

NEW MAGIC QUICK CLICK—This in solid letters describing insect lotion. Filed by Abelino Seonane, Denver, Feb. 6, 1941. Claims use since Jan. 25, 1941.

LACTRA—This in solid letters describing dentifrice. Filed by Lactra Tooth Paste Co., New York, Feb. 11, 1941. Claims use since Dec. 26, 1940.

COPOLOID—This in solid letters describing fungicide. Filed by Miller Chemical & Fertilizer Corp., Baltimore, Feb. 11, 1941. Claims use since Mar. 1, 1939.

ANHYDE—This in solid letters describing antiseptic foot powder. Filed by J. L. Hoffman Co., Allentown, Pa., Feb. 12, 1941. Claims use since Feb. 7, 1941.

S-KAPE—This in solid letters describing insect repellent. Filed by Foley & Co., Chicago, Feb. 19, 1941. Claims use since Feb. 14, 1941.

OLD-FRENCH — This in solid letters over the letter S within a circle describing polish. Filed by Steele Mfg. Co., New Orleans, Dec. 19, 1940. Claims use since May 1, 1939.

LAKESEAL—This in script letters describing detergent. Filed by Finger Lakes Chemical Co., Ithaca, N. Y., Dec. 13, 1940. Claims use since June 29, 1940.

MAXOL—This in fancy letters describing cleaner. Filed by Cleaning Specialists Co., Phila., Dec. 20, 1940. Claims use since May 17, 1940.

MERCURY—This in solid letters describing soap and shaving cream. Filed by Theobald Industries, Kearny, N. J., Feb. 14, 1941. Claims use since July 15, 1940.

MERCURY — This in slanted letters under drawing of wings describing soap and shaving cream. Filed by Theobald Industries, Kearny, N. J., Feb. 14, 1941. Claims use since July 15, 1940.

MERCURY—This in outline letters under drawing of wings inside circle describing soap and shaving cream. Filed by Theobald Industries, Kearny, N. J., Feb. 14, 1941. Claims use since July 15, 1940.

OVER THE TOP—This in solid letters below drawing of globe and barber chair describing shampoo. Filed by Reese & Linehan, Portland, Ore., Feb. 5, 1940. Claims use since Aug. 11, 1939.

FLEET FEET — This in solid letters describing foot powder. Filed by Fleet Feet Co., Miami, Fla., Oct. 4, 1940. Claims use since Sept. 5, 1939.

ALOX—This in stencil letters describing chemical compound for incorporation into detergents. Filed by Alox Corp., Niagara Falls, N. Y., Jan. 6, 1941. Claims use since June 30, 1937.

NIPICIDE—This in solid letters describing insecticides. Filed by National Antiseptics, Seattle, Jan. 25, 1941. Claims use since Oct. 1, 1940.

CRYSTAMET—This in solid letters describing detergent. Filed by Cowles Detergent Co, Cleveland, Jan. 28, 1941. Claims use since Nov. 23, 1940.

SLIK—This in large solid letters describing cleaner. Filed by Claire Mfg. Co., Chicago, Apr. 15, 1940. Claims use since June 1, 1929.

WYANDOTTE APACHE—This in script and solid letters describing detergent. Filed by J. B. Ford Co., Wyandotte, Mich., Sept. 27, 1940. Claims use since Aug., 1940.

FLEE FLEA—This in solid letters describing insecticides. Filed by Selig Co., Atlanta, Ga., Jan. 7, 1941. Claims use since Dec. 16, 1940.

LAVCO—This in solid letters describing foot powder. Filed by Maldehyde Chemical Co., St. Louis, Feb. 3, 1941. Claims use since Dec. 16, 1936.

STOP DROP—This in outline letters over drawing of apple describing naphthalene spray. Filed by Sherwin-Williams Co., Cleveland, Feb. 14, 1941. Claims use since June 13, 1940.

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Cop-Fix—This in solid letters describing insecticide. Filed by Russell Farley & Co., Akron, O., Mar. 10, 1941. Claims use since Mar. 1, 1940.

Trade Marks Granted

385,911. Radiator flush. General Tire & Rubber Co., Akron. Filed Dec. 1, 1937. Serial No. 400,341. Published Jan. 7, 1941. Class 6.

385,915. Dentifrice. Procter & Gamble Co., Cincinnati. Filed Oct. 17, 1938. Serial No. 411,710. Published Dec. 31, 1940. Class 6.

385,938. Dishwashing preparation. Squirtex Co., Phila. Filed March 13, 1940. Serial No. 429,676. Published June 4, 1940. Class 4.

385,961. Insecticide. Lucas-Kil-Tone Co., Phila. Filed June 25, 1940. Serial No. 433,356. Published Sept. 3, 1940. Class 6.

385,995. Shampoo. Trelak Co., St. Louis. Filed Aug. 19, 1940. Serial No. 435,151. Published Dec. 17, 1940. Class 6.

386,018. Insecticide. M. & M. Prods. Co., Fairview, Okla. Filed Sept. 19, 1940. Serial No. 436,131. Published Dec. 17, 1940. Class 6.

386,020. Insecticide. Commercial Solvents Corp., N. Y. Filed Sept. 20, 1940. Serial No. 436,164. Published Dec. 24, 1940. Class 6.

386,024. Household Bleach. Kitchen Prods., Chicago. Filed Sept. 21, 1940. Serial No. 436,219. Published Dec. 24, 1940. Class 6.

386,032. Cleaning compound. Huntington Laboratories, Huntington, Ind. Filed Oct. 10, 1940. Serial No. 436,803. Published Dec. 31, 1940. Class 6.

386,098. Shampoo and Toothpaste. Simon Kleinkramer, N. Y. Filed Nov. 2, 1940. Serial No. 437,516. Published Dec. 24, 1940. Class 6.

386,100. Cleaner. Barker Chemical Prods. Co., Los Angeles. Filed Nov. 4, 1940. Serial No. 437,546. Published Jan. 14, 1941. Class 4.

386,133. Insecticide. Midway Chemical Co., Jersey City, N. J. Filed Nov. 13, 1940. Serial No. 437,830. Published Dec. 31, 1940. Class 6.

386,135. Cleaner. Household Chemical Sales, Long Island City, N. Y. Filed Oct. 19, 1940. Serial No. 437,852. Published Dec. 31, 1940. Class 4.

386,138. Insecticide. Pennzoil Co., Los Angeles. Filed Nov. 14, 1940. Serial No. 437,877. Published Dec. 31, 1940. Class 6.

386,149. Detergent. Blotex Co., Springfield, O. Filed Nov. 16, 1940. Serial No. 437,934. Published Jan. 14, 1941. Class 4.

386,206. Polish. Glidden Co., Cleveland. Filed March 5, 1937. Serial No. 389,682. Published July 25, 1939. Class 16.

386,209. Athlete's Foot Preparation. Irvin & Rose, New Orleans. Filed Aug. 24, 1938. Serial No. 409,942. Published Jan. 21, 1941. Class 6.

386,212. Germicide. Health-Gard Process Co., Brooklyn, N. Y., Filed Feb. 28, 1939. Serial No. 416,501. Published Jan. 21, 1941. Class 6.

386,221. Shampoo. L. J. Awad Mfg. Co., Phila. Filed Jan. 29, 1940. Serial No. 427,954. Published Jan. 7, 1941. Class 6.

386,225. Athlete's foot preparation. W. E. Ulrich, Buffalo, N. Y. Filed April 2, 1940. Serial No. 430,294. Published Jan. 21, 1941. Class 6.

386,226. Shampoo and dentifrice. Lillian Russell, Kew Gardens, N. Y. Filed April 4, 1940. Serial No. 430,362. Published Jan. 21, 1941. Class 6.

386,240. Shoe polish. Salomon & Phillips, N. Y. Filed Aug. 15, 1940. Serial No. 435,031. Published Jan. 21, 1941. Class 4.

386,250. Nursery Spray. Vanta Laboratories, Newton, Mass. Filed Sept. 21, 1940. Serial No. 436,206. Published Jan. 21, 1941. Class 6.

386,251. Cleaner. Turco Prods., Inc., Los Angeles. Filed Sept. 28, 1940. Serial No. 436,488. Published Jan. 21, 1941. Class 4.

386,254. Cleaner. Rust-Foe Co., N. Y. Filed Oct. 4, 1940. Serial No. 436,661. Published Jan. 21, 1941. Class 6.

386,284. Radiator flush. Stewart-Warner Corp., Chicago. Filed Nov. 6, 1940. Serial No. 437,634. Published Jan. 21, 1941. Class 6.

386,376. Soap. Roger & Gallet, N. Y. Filed Jan. 23, 1940. Serial No. 427,773. Published July 16, 1940. Class 4.

386,391. Cleaner. Turco Prods., Los Angeles. Filed July 9, 1940. Serial No. 433,803. Published Jan. 28, 1941. Class 4.

386,430. Cleaner. Beacon Chemical Corp., Phila. Filed Nov. 27, 1940. Serial No. 438,260. Published Jan. 28, 1941. Class 4.

386,447. Motor Solvent. Permorite Prods. Co., Los Angeles. Filed Dec. 16, 1940. Serial No. 438,870. Published Jan. 28, 1941. Class 6.

386,488. Insecticide. Seacoast Laboratories, New York. Filed Mar. 15, 1940. Serial No. 429,626. Published Jan. 28, 1941. Class 6.

386,491. Soap. House of Gordon, Chicago. Filed Apr. 10, 1940. Serial No. 430,601. Published Feb. 4, 1941. Class 4.

386,509. Polish. Glorishine Prods., Sacramento, Calif. Filed Aug. 30, 1940. Serial No. 435,530. Published Jan. 28, 1941. Class 16.

386,528. Floor wax. O'Brien Varnish Co., South Bend, Ind. Filed Oct. 28, 1940. Serial No. 437,348. Published Jan. 28, 1941. Class 16.

386,554. Fungicide. General Chemical Co., New York. Filed Nov. 16, 1940. Serial No. 437,943. Published Feb. 4, 1941. Class 6.

386,562. Rust remover. Miller Mfg. Co., Camden, N. J. Filed Nov. 20, 1940. Serial No. 438,080. Published Feb. 4, 1941. Class 6.

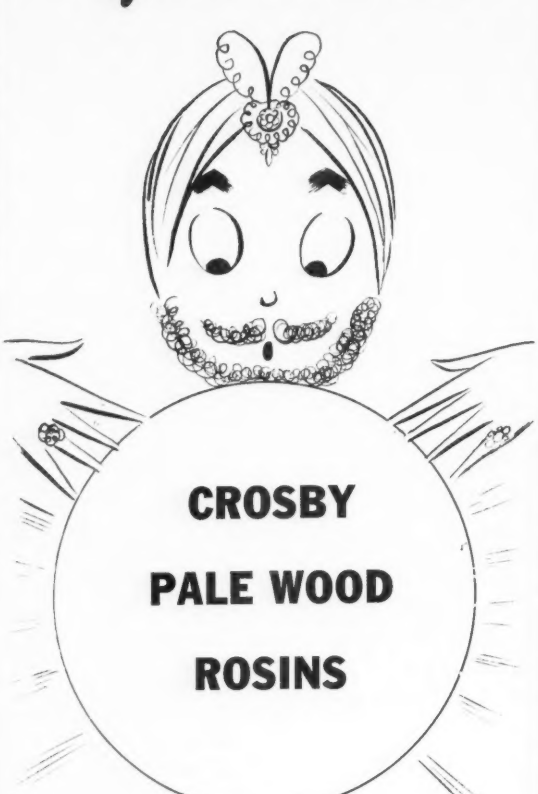
386,572. Detergent. Cowles Detergent Co., Cleveland. Filed Nov. 27, 1940. Serial No. 438,294. Published Jan. 28, 1941. Class 4.

386,593. Germicide. Abbott Laboratories, North Chicago, Ill. Filed Dec. 11, 1940. Serial No. 438,716. Published Feb. 4, 1941. Class 6.

Textile Assistants

Fatty acids containing more than 8 carbon atoms are condensed with aminoguanidine or its salts, preferably at 140°, to give textile aids. The water formed is removed by heating or by azeotropic distillation with benzene. I. G. Farbenindustrie A.-G. French Patent No. 845,137.

Crystal Clear



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RAW MATERIAL MARKETS

As of April 25, 1941

NEW YORK — Most important raw materials for the manufacture of soaps and sanitary chemicals continued to advance still further during the past month. But for the first time since the general price rise began several months ago, the price of tallow leveled off and has remained at an unchanged price for the past week. Practically all fatty materials are higher than a month ago, the price advance amounting to approximately 1¼ cents a pound, more or less, in the cases of materials such as tallow, grease, palm oil, coconut oil, corn oil, olive foots and soyabean oil. Many essential oils continued to become higher priced and scarcer during the period. Candelilla wax was advanced somewhat, while other waxes remained generally the same as a month ago as did most chemicals.

—— ♦ ——

Animal Fats

A breathing spell was enjoyed for the first time in several months when the price of extra tallow leveled off at 7½ cents a pound, delivered, after having been advanced steadily up to that price. A factor in the leveling off was the entrance of South American and Australian tallow and other animal fats into the market when the domestic price became high enough to make shipments profitable. It is believed by some dealers that current prices will remain essentially unchanged as long as imports continue to arrive. Shipping space is tight, however. Extra tallow is currently 7⅜ cents a pound, f.o.b., N. Y.; yellow grease is quoted at 7 cents a pound. Tallow is in a very favorable position with respect to other fatty materials, particularly the imported vegetable oils, although tallow supplies have been cut by increased demand for lubricating oils and greases. The amount of tallow going into machinery oil has been increased from 10 per cent to 20 per cent.

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Vegetable Oils

Higher freight rates and a difficult shipping situation in the Pacific produced further increased prices on coconut oil, copra and palm oil during the past month. Coconut oil, tanks, N. Y., is currently quoted at 6⅜ cents a pound, nominal, with sellers not generally offering. Palm oil, Sumatra, tanks, spot, is priced at 5¼ cents a pound. Numerous losses by sinking of British tankers bound for the United States have added to the present confused picture with importers completely in the dark as to whether and when shipments are going to arrive. Cargo losses have been ascribed in many cases to activity of Japanese raiders. Domestic vegetable oils are all higher than a month ago with soyabean oil at 7⅞ to 8 cents a pound, corn oil at 9⅛ cents a pound and the fatty acids decidedly strong and more active at higher levels. Denatured olive oil is extremely scarce, the new supply looking darker than ever. The denatured oil is quoted at only 10 cents a pound under the edible by some sellers. Foots are also extremely scarce and high priced, being currently quoted at 14 cents a pound. It is believed that no more Greek ships will be able to leave with oil cargoes.

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Essential Oils

The extremely tight shipping situation produced by higher insurance rates and absence of shipping space for essential oils due to preferential use of space for more important cargoes brought higher prices on many imported essential oils during the month. Stocks are extremely low or non-existent on certain oils and prices are strictly nominal on other scarce materials. Certain of the domestic oils have been affected by the selective service program which is taking men away from producing areas, resulting in higher labor costs and higher prices. Advanced during the month were oil of sweet almond, oil of juniper tar, oil of bergamot, oil of citronella Java. Prices were reduced on anise, patchouli, and oil of pine needle Siberian.

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P & G Earnings Down

Procter & Gamble Co., Cincinnati, and subsidiaries recently reported for the quarter ended March 31 net income of $7,166,041, equal to $1.09 a common share. This compares with net income of $7,686,610, or $1.18 a common share in the quarter ended March 31, 1940, and $5,020,035, or 76 cents a share in the quarter ended Dec. 31, 1940. For the nine months ended March 31, 1941, net income was $16,776,068, or $2.25 a common share, compared with $22,273,148, or $3.40 a share for the comparable 1940 period.

—— ♦ ——

Offer Premiums of R. R. Tours

Coupons in each package of "Mercury," new granulated household soap of Theobald Industries, Kearny, N. J., entitle the owner to one mile of railroad travel in any of the tours selected as a premium.

—— ♦ ——

C-P-P Sales Manager Dies

Carl J. Remmel, for many years sales manager for Colgate-Palmolive-Peet Co., Jersey City, at the Oakland, Cal., branch office, died recently at Santa Cruz, Cal.

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- Gurjon
- Nutmeg
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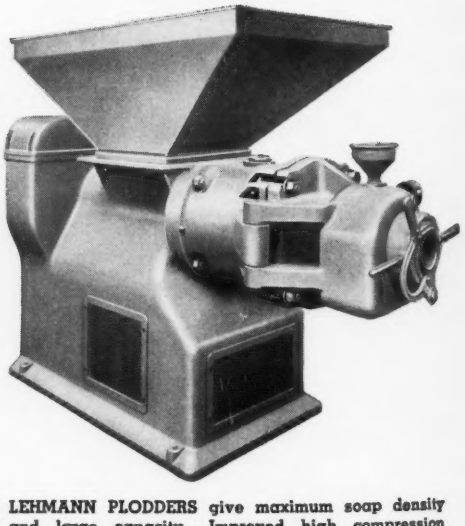
PLODDER TYPE 364



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● **LEHMANN PLODDERS** give maximum soap density and large capacity. Improved high compression worms are durable light weight non-contaminating aluminum alloy. Built-in gear head motor gives space economy.

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250 WEST BROADWAY — NEW YORK, N. Y.

RAW MATERIAL PRICES

(As of April 25, 1941)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .07½	$ .08
Acid, Boric, bbls. 99½%	ton	96.00	128.00
Cresylic, drums	gal.	.68	.70
Low boiling grade	gal.	.68	.70
Muriatic, C. P., carboys	lb.	.08	—
Oxalic, bbls.	lb.	.10¾	.12
Adeps Lanae, hydrous, drums	lb.	.24½	.25
Anhydrous, drums	lb.	.26½	.27
Alcohol, Ethyl, U.S.P., bbls.	gal.	6.02½	6.09
Complete Denat., SD 1, dms., ex.	gal.	.33	.39
Alum. Potash lump, bbls.	lb.	.04	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., bbls.	lb.	.08	—
Bentonite, 1, works, 325 mesh	ton	16.00	—
Bentonite, 2, works, 200 mesh	ton	11.00	—
Bleaching Powder, drums	100 lb.	2.00	3.35
Borax, pd., cryst., bbls., kegs	ton	58.00	74.00
Carbon Tetrachloride, car lots	gal.	.66½	1.10
L. C. L.	gal.	.73	1.20
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	16.00
Cresol, U.S.P., drums	lb.	.09¾	.10¼
Creosote Oil	gal.	.13½	.14½
Feldspar, works (200 to 325 mesh)	ton	32.00	35.00
Formaldehyde, bbls.	lb.	.05½	.06
Fullers Earth	ton	15.00	—
Glycerine, C.P., drums	lb.	.12½	.13
Dynamite, drums	lb.	—	Nom.
Saponification, drums	lb.	.08½	.08¾
Soap, lye, drums	lb.	.07⅛	.07⅜
Hexalin, drums	lb.	.30	—
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	ton	6.25	13.00
Mercury Bichloride, kegs	lb.	2.24	2.39
Naphthalene, ref. flakes, bbls.	lb.	.07	.07¼
Nitrobenzene (Mirbane) drums	lb.	.08	.09
Paradichlorbenzene, drums	lb.	.11	.13½
Petrolatum, bbls. (as to color)	lb.	.02¾	.07½
Phenol (Carbolic Acid), drums	lb.	.13	.14¾
Pine Oils, bbls.	gal.	.50	.59
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	—
Liquid, 45% basis	lb.	.02⅞	.03¾
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.02¾	.03⅛
Pumice Stone, powder	100 lb.	No Prices	
Rosins (net wt., ex yard, New York)—			
Grade D to H	100 lb.	2.35	2.43
Grade I to N	100 lb.	2.43	2.59
Grade WG to X	100 lb.	3.05	3.33
Wood, ex. dock	100 lb.	1.54	1.90
Rotten Stone, pwd., bbls.	lb.	—	—
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04½
Olive Castile, bars	lb.	.28	.38
Olive Castile, powder	lb.	.33	.40
Powdered White, Neutral	lb.	.18½	.20
Olive Oil Foot, bars, 68-70%	lb.	.09	—
Green, U.S.P.	lb.	.08	.09
Tallow Chips, 88%	lb.	.06⅛	.06¾
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.10	1.35
Carlots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	2.30	—
Flake	100 lb.	2.70	2.95
Liquid, tanks, 47-49%	100 lb.	1.95	—
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	15.00	15.60
Sodium Fluoride, bbls.	lb.	.07	.08¼
Sodium Hydrosulfite, bbls.	lb.	.16	.17
Sodium Metasilicate, ground	100 lb.	3.75	4.80
Crystalline	100 lb.	2.35	3.35
Sodium Pyrophosphate	100 lb.	5.10	5.60
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks.	100 lb	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.22	.27
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	100 lb.	2.35	3.05
Zinc Oxide, lead free	lb.	.06½	.07

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.09¼	Nom.
Castor, No. 1, bbls.	lb.	—	.10¾
No. 3, bbls.	lb.	—	.10¼
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.06⅝	Nom.
Tanks, Pacific Coast, futures	lb.	.06⅛	Nom.
Copra, bulk, coast	lb.	.0350	—
Corn, tanks, West	lb.	.09⅛	—
Cottonseed, crude, tanks, mill	lb.	.08	.08⅛
PSY, futures	lb.	.09⅛	.09⅜
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.09¾	.10
Coconut Oil, tanks, Twitchell, Chi.	lb.	.11½	.11¾
Cotton Oil, tanks, Chicago	lb.	.08	.08¼
Settled soap stock, Chicago	lb.	.02¾	.03
Boiled soap stock, 65%, Chi.	lb.	.03¾	.04
Foots, 50%, Chicago	lb.	.01⅝	.01¾
Red Oil, bbls., dist. or sapon., Chi.	lb.	.10	.10⅜
Tanks	lb.	.09½	.09¾
Stearic Acid, saponif.			
Double pressed	lb.	.12¾	—
Triple pressed	lb.	.15½	—
Greases, choice white, tanks	lb.	.07½	—
Yellow	lb.	.07	.07⅛
Lard, city, tubs	lb.	.08⅞	—
Linseed, raw, bbls.	lb.	.1070	.1090
Tanks, raw	lb.	.1000	.1020
Olive, denatured, bbls., N. Y.	gal.	2.60	3.30
Foots, bbls., N. Y.	lb.	.14	—
Palm, Sumatra, cif. New York, tanks	lb.	.05¼	—
Palm, kernel, shipment	lb.	No Prices	
Soya Bean, domestic, tanks, crude	lb.	.07⅞	.08
Stearin, oleo, bbls.	lb.	.09½	—
Tallow, special, f.o.b. N. Y.	lb.	.07¼	—
City, ex, loose, f.o.b. N. Y.	lb.	.07⅜	—
Teaseed Oil, crude	lb.	.18¼	Nom.
Whale, refined	lb.	.0950	—

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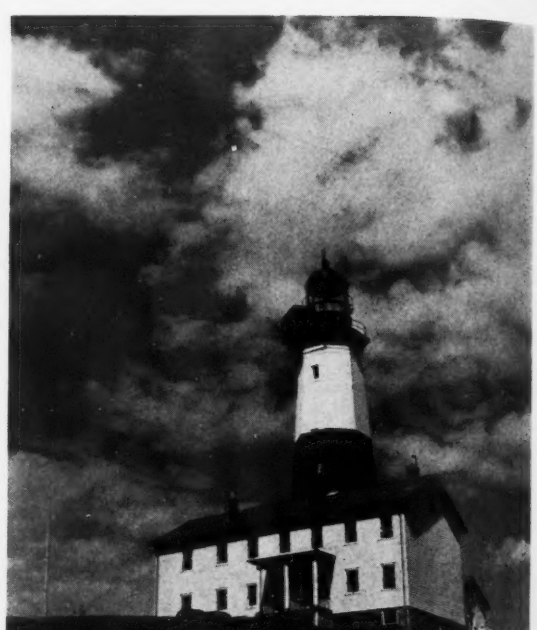

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(As of April 25, 1941)

Essential Oils

Almond, Bitter, U.S.P.	lb.	—	—
Bitter, F.F.P.A.	lb.	—	—
Sweet, cans	lb.	$1.50	$1.55
Anise, cans, U.S.P.	lb.	.85	.95
Bay, 55-60% phenols, cans	lb.	1.00	1.20
Bergamot, coppers	lb.	22.00	Nom.
Artificial	lb.	3.75	9.25
Birch Tar, rect., cans	lb.	1.15	1.40
Crude, cans	lb.	.45	.65
Bois de Rose, Brazilian	lb.	2.10	2.30
Cayenne	lb.	—	—
Cade, cans	lb.	.60	.70
Cajeput, native, cans	lb.	.65	.88
Calamus, cans	lb.	8.25	Nom.
Camphor, Sassy, drums	lb.	.22	.24½
White, drums	lb.	.22	.23
Cananga, native, cans	lb.	5.00	5.50
Rectified, cans	lb.	5.50	6.00
Caraway Seed	lb.	8.25	Nom.
Cassia, Redistilled, U.S.P.	lb.	2.00	2.55
Cedar Leaf, cans	lb.	.90	1.25
Cedar Wood, light, drums	lb.	.25	.26
Citronella, Java, drums	lb.	.38½	.48
Citronella, Ceylon, drums	lb.	.41	.49
Clove, U.S.P., cans	lb.	1.15	1.25
Eucalyptus, Austl., U.S.P., cans	lb.	.68	.80
Fennel, U.S.P., cans	lb.	2.00	2.15
Geranium, African, cans	lb.	12.50	Nom.
Bourbon, cans	lb.	13.75	Nom.
Turkish	lb.	3.00	Nom.
Hemlock, tins	lb.	.85	1.05
Lavender, 30-32% ester, cans	lb.	5.00	Nom.
Spike, Spanish, cans	lb.	1.80	2.15
Lemon, Ital., U.S.P.	lb.	4.75	Nom.
Cal.	lb.	3.25	—
Lemongrass, native, cans	lb.	1.10	1.35
Linaloe, Mex., cases	lb.	1.75	2.00
Nutmeg, U.S.P., cans	lb.	2.25	2.65
Orange, Sweet, W. Ind., cans	lb.	2.30	2.40
Italian cop	lb.	8.00	Nom.
Distilled	lb.	.90	—
California, expressed	lb.	2.25	—
Origanum, cans, tech.	lb.	1.50	1.55
Patchouli	lb.	4.75	6.00
Pennyroyal, dom.	lb.	3.00	Nom.
Imported	lb.	2.25	2.75
Peppermint, nat., cans	lb.	3.40	4.00
Redis., U.S.P., cans	lb.	3.65	4.35
Petitgrain, S. A., cans	lb.	1.50	1.55
Pine Needle, Siberian	lb.	1.30	1.35
Rosemary, Spanish, cans	lb.	.83	.88
drums	lb.	.75	.85
Sandalwood, E. Ind., U.S.P.	lb.	4.95	5.25
Sassafras, U.S.P.	lb.	1.00	1.25
Artificial, drums	lb.	.70	.78
Spearmint, U.S.P.	lb.	2.75	3.00
Thyme, red, N. F.	lb.	1.40	2.05
White, N. F.	lb.	1.70	2.30
Vetiver, Bourbon	lb.	6.00	10.00
Ylang Ylang, Bourbon	lb.	12.50	Nom.

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.60	—
Amyl Cinnamic Aldehyde	lb.	1.70	$2.00
Anethol	lb.	1.10	1.15
Benzaldehyde, tech.	lb.	.45	.50
U.S.P.	lb.	.85	.95
Benzyl, Acetate	lb.	.44	.49
Alcohol	lb.	.63	.68
Citral	lb.	1.40	3.10
Citronellal	lb.	.75	.80
Citronellol	lb.	1.60	1.85
Citronellyl Acetate	lb.	4.00	7.00
Coumarin	lb.	2.75	3.00
Cymene, drums	gal.	.90	1.25
Diphenyl oxide	lb.	.50	.55
Eucalyptol, U.S.P.	lb.	.80	.85
Eugenol, U.S.P.	lb.	1.75	2.00
Geraniol, Domestic	lb.	.60	3.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	1.20	2.50
Heliotropin	lb.	3.00	3.20
Hydroxycitronellal	lb.	2.00	2.50
Indol, C. P.	lb.	32.00	34.00
Ionone	lb.	2.75	3.95
Isoborneol	lb.	.90	1.07
Iso-bornyl acetate	lb.	.80	.95
Iso-Eugenol	lb.	2.80	4.25
Linolool	lb.	3.10	4.00
Linalyl Acetate	lb.	3.20	4.25
Menthol	lb.	3.65	4.10
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.20	2.30
Paracresol	lb.	4.50	6.00
Salicylate, U.S.P.	lb.	.35	.37
Musk Ambrette	lb.	3.65	3.95
Ketone	lb.	3.70	4.10
Xylol	lb.	1.05	1.20
Phenylacetaldehyde	lb.	2.10	2.50
Phenylacetic Acid	lb.	1.75	3.00
Phenylethyl Alcohol	lb.	2.30	3.35
Rhodinol	lb.	5.50	10.90
Safrol	lb.	.85	.90
Terpineol, C. P., drs.	lb.	.25	—
Cans	lb.	.28	—
Terpinyl Acetate, 25 lb. cans	lb.	.82	.85
Thymol, U.S.P.	lb.	1.55	1.60
Vanillin, U.S.P.	lb.	2.50	2.75
Yara Yara	lb.	1.25	1.55

Insecticide Materials

Insect Powder, bbls.	lb.	.23	.26
Pyrethrum Extract			
5 to 1	gal.	1.20	1.25
20 to 1	gal.	4.75	4.95
30 to 1	gal.	7.20	7.40
Derris, powder—4%	lb.	.18	.20
Derris, powder—5%	lb.	.21	.23
Cube, powder—4%	lb.	.16	.19
Cube, powder—5%	lb.	.19	.22
Squill, red, dried	lb.	.80	1.25
Phosphorus paste	lb.	.25	.62½

Waxes

Bees, white	lb.	.38	.40
African, bgs.	lb.	.29	.30½
Refined, yel.	lb.	.35	.36
Candelilla, bgs.	lb.	.21½	.22¼
Carnauba, No. 1, yellow	lb.	.68	.69
No. 2, N. C.	lb.	.64	.65
No. 3, Chalky	lb.	.56	.57
Ceresin, yellow	lb.	.11	.14½
Montan Wax	lb.	No Prices	
Paraffin, ref., 125-130	lb.	.0570	—

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PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

Medicated Soap

ALTHOUGH not widely sold, the manufacture and sale of medicated soaps is usually a fairly profitable undertaking, as the retail price is naturally higher than that of the usual toilet soap. In introducing antiseptics or medicaments, it should be kept in mind that the additive must be stable to alkali, have no chemical reaction with the soap itself, and have a minimum effect on texture, color, detergency, and keeping qualities.

It must be admitted at the outset that it is very doubtful whether or not medicated soaps have any real value apart from their ordinary cleansing properties. Not only is soap a bad vehicle for substances which have to be absorbed by the skin, but its very nature tends to prevent entry of the medicament, as it would keep it in suspension or solution, only to be removed in rinsing. In any case, the amount of medicament which comes in contact with the skin at each washing is very small and the period of contact a matter of seconds only.

It should also be remembered that many of the skin complaints for which medicated soaps are used may be in themselves symptomatic of some internal disorder which can only be relieved by appropriate medical treatment. It is not therefore advisable to make special claims or even recommendations; rather the manufacturer should be content with such modest statements as "this soap contains substances which assist in keeping the skin in a healthy condition."

In spite of the above frank opinion; concerning the real value of medicated soaps, there is still a steady demand for soaps containing sulfur, witch hazel, etc., "iodine" soap containing potassium iodide being a best seller of today in England. There is certainly a potential market for soaps containing less well-known substances if properly advertised and presented.

As to the nature of such additives, many essential oils are of high antiseptic value. It is not generally realized that 1 per cent of lavender oil will make a soap a more effective antiseptic than the same proportion of phenol. Other oils with considerable bactericidal action are pine, eucalyptus, and tea-tree oil. Antiseptics available for experiment include salol, *beta*-naphthol, oxyquinoline sulfate, thymol, resorcinol, and mercuric chloride. It is interesting to note that although mercuric chloride as such would soon react with the soap to form an insoluble, and from an antiseptic point of view, inert substance, its incorporation has been the subject of several patents. One of these consists in forming a soluble albuminate which is stated to remain active in a soap medium.

The chlorinated phenolic compounds such as monochlorothymol have possibilities. They have pleasant antiseptic odors, high phenol coefficients, and show signs of becoming popular as general antiseptics.

All medicaments soluble in lanolin should preferably be added to soap in that form, as lanolin is readily absorbed by the skin, to whose natural secretions it is closely allied. The medicament is usually added to the soap chips with the color and perfume prior to mixing and milling. All new medicaments should be shelf-tested in soap over a reasonable period in order to ascertain whether or not the substance tends to discolor the soap or to give rise to rancidity. The soap itself should be fairly highly colored, not only because the public expects it to be, but because many of the possible additives will tend to darken the soap. It is also advisable to have a fairly definite "medicated" odor, obtained by means of a perfume if the additive itself is not sufficiently pungent.

The tablet should be on the small side, as it is not wise to give too much for the money, and should be deeply stamped with its name, to preserve the latter as long as pos-

sible. Marketed with its own dish made of plastic, the soap would be held to be distinctive, and could be kept apart from ordinary toilet soap. John Glenn. *Soap, Perfumery and Cosmetics* **14,** 48,9 (1941).

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Alkalinity of Silicates

The usual commercial sodium silicate shows on an average a content of about 0.5 per cent of free alkali. A method for determining the content of free rather than total alkali is as follows: 10 grams of the commercial silicate are dissolved in 100 cc. of water with stirring and treated with 100 cc. of a 10 per cent barium chloride solution. After diluting to 250 cc. and shaking, filter, discarding the first 20-30 cc. of filtrate. Titrate the next 100 cc. of filtrate, corresponding to 4 grams of sample, with 0.1 normal hydrochloric acid to a phenolphthalein endpoint-1 cc. of 0.1 normal hydrochloric acid corresponds to 0.004 grams of sodium hydroxide. Values obtained by this method lay between 0.3 and 0.7 per cent of free alkali. Comparison of the pH values of 5 per cent solutions of various alkalies gives the following results: caustic soda solution pH 13, sodium metasilicate 12.1, soda ash 11.0 and commercial sodium silicate 10.6, the last being the mildest alkali in the group. Olii-Grassi-Saponi **6,** No. 7-8, 116 (1940); through *Fette und Seifen* **47,** 607 (1940).

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Antioxidant Wetting Agent

Various compounds suitable for use as emulsifying, wetting and dispersing agents, or as antioxidants or rust-preventives, are produced by reactions such as that of 2-amino-2-methyl-1, 3-propanediol with diethyl carbonate to form a urethan, and continuing the reaction until a cyclic urethan is formed by elimination of ethyl alcohol. T. S. Hodgins and A. G. Hovey, to Reichhold Chemicals, Inc. U. S. Patent No. 2,215,038.

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Coconut Skin Oil

Oil produced from the dry skins or "parings" of coconuts has an iodine value of 19-25 and a saponification value of 237-244. R. Child. *J. Coconut Inds.* **3,** No. 2, 86-91; through *Chem. Abs.*

Medicated Soaps

Various products can be added to soap to give it disinfectant action. A phenol soap for physicians, in order to have high activity, is prepared by combining soap powder and phenol soap in the proportion of 3:1. To prepare a good creosote soap, the fat stock is saponified with lye at 40-80°C. and the disinfectant and other materials are stirred in. Phenyl salicylate has been recommended for addition to a germ-killing shaving soap. Oxygen-liberating soaps may also be classed as disinfectant soaps. The active component is usually sodium perborate.

Sulfur-containing soaps are considered to have some therapeutic value. Solid soaps may be prepared by the addition of flowers of sulfur. Some sulfur reacts with the free alkali of the soap to form sodium sulfide. Sulfur soaps containing bromine and iodine should be mentioned. The components of the potash soap are potassium bromide, potassium iodide, sodium thiosulfate, potassium sulfide, precipitated sulfur or calcium sulfide. In order to ensure activity, such soaps have to be prepared fresh. Iodine soap is prepared by dissolving potash soap and sodium thiosulfate in water and adding dissolved potassium iodide.

Ichthyol soaps are another form of sulfur soap. Ichthyol tends to make the soap hard, so that excess water is added to the melted soap to counteract this effect. Another medicinal soap is one containing salicylic acid. This compound in solution has a softening action on dead skin, making it easy to remove. This is probably the basis for the use of salicylic acid in corn removers. When present in soap salicylic acid not only retains this property but possesses it in an increased degree. Th. Ruemele. *Seifensieder-Ztg.* 68, 8, 19-20 (1941).

Soap in Dry Cleaning

Soaps used in dry cleaning contain a sufficient amount of moisture to assist in the removal of water-soluble stains. The soaps may be classified as follows:

1. Paste benzine soaps. Can be clarified with an alkali system or distillation, cannot be used on the filter.

2. Soluble benzine soaps. Used with filtration and distillation.

3. Detergent soaps. Used with filtration and distillation only.

4. Chlorinated soaps. Used in chlorinated solvents.

Approximately 1 pound of soap per 50 gallons of solvent should be used with Stoddard Solvent, or 1 ounce per 5 pounds of load in synthetic units.

When the solvent has become saturated with dead soap and soil, the latter is simply spread uniformly over all the fabrics. The tendency is to wait too long before clarifying the solvent. The general condition of the solvent is fairly accurately reflected by its acid number. Fatty acid is formed first in the soap decomposition, but this is subsequently changed to peroxides and aldehydes, the latter producing a rancid odor. Although odor-producing compounds may be present when the acid number is less than 0.3, they are not in sufficiently high concentration to be noticed. Above an acid number of 0.3, the concentration of aldehydes may be sufficiently high to cause odor trouble. Odors produced on garments in the drying room or on the press can be traced directly to a solvent having too high an acid number. A. W. Miller. *Laundry & Dry Cleaning J.* of Canada **21,** No. 3, 20-3 (1941).

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Refining Tall Oil

Tall oil is treated at a temperature below about 30°C. with a sufficient quantity of sulfuric acid to precipitate the coloring matter and a substantial portion of the unsaponifiable matter, including phytosterol. F. H. Gayer and C. E. Fawkes, to Continental Research Corp. U. S. Patent No. 2,223,850.

Hand Soap Testing

A PRACTICAL method which can be made quantitative for testing the efficiency of hand soaps uses the conditions under which cleansing is actually done. The hands of the investigator are soiled with an oil or fat containing an oil-soluble dye and the conditions determined under which the dye plus soil is completely removed by the detergent under examination. By extracting the dye from the wash waters and determining it colorimetrically, the speed and efficiency of different detergents are compared.

Three products were used in the tests. One was a liquid soap, the usual potash type. The soap solution was alkaline in reaction and not resistant to hard water. Compared with this were two synthetic liquid detergents: Preparation A is the sodium salt of fatty-acid condensation products and sulfuric esters of high molecular-weight fatty acids, as in the formula:

$$\begin{array}{l} RCHCOONa \\ | \\ OSO_3Na \end{array}$$

Preparation B contains as its active constituent a protein-fatty acid condensation product and is free from fatty alcohol sulfate. The carboxyl group of the fatty acid is blocked by the amide group:

$$RCNHR_1(CONHR_2)_xCOONa$$

The standard procedure was to rub 1 gram of oil in which 0.2 per cent of Sudan red had been dissolved, over the hands for 5 minutes. After this 0.5 cc. of cleansing agent was spread over the hands, 3 cc. of water poured on dropwise, and the hands rubbed together in the usual manner of washing. After a washing period of one-half minute, the hands are rinsed off with water and shaken to dry them. A second washing is made on the moist hands with 0.5 cc. of cleansing agent, rubbed on for one-half minute, then washed for one-half minute with 2 cc. of water, and rinsed. This last procedure is repeated except that the hands are washed for 1 minute instead of a half minute.

The rinse waters from each of the three washing processes are extracted with 25-150 cc. of chloroform, according to the depth of color. After complete extraction of each quantitatively, each chloroform solution is diluted with chloroform to a definite volume and the concentration of dye determined in a colorimeter, comparing with a standard colored oil in chloroform solution.

In determinations in which mineral oil and coconut oil served as soil materials, preparation A and preparation B were nearly equal in efficiency and both were much better than the liquid soap. The synthetic detergents removed on an average over 95 per cent of both types of soil on the first washing, the liquid soap only 81-2 per cent.

Interfacial tension measurements against oil made with the detergents, showed soap to have a lower interfacial tension than either of the two synthetic materials, suggesting that this measurement does not necessarily correspond to practical results. When determinations were made of the suspending power of the three products for lampblack, preparation B was most efficient, preparation A next, and liquid soap poorest, the ratio of relative suspending power in decreasing order of efficiency being B : A : Soap, as 1: 4 : 50. This test appears to be a better measurement of practical detergency than interfacial-tension measurement, but it does not necessarily indicate the same quantitative relationships as would be obtained by practical tests. H. Ruf and J. Renger. *Fette und Seifen* **47,** 590-5 (1940).

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Fat Splitting

Fats and oils are hydrolyzed by heating the materials with liquid water to above 185° but substantially below 287°, long enough to effect a substantial degree of hydrolysis. The resulting aqueous glycerine is separated from the fatty material. Hydrolysis of the latter is completed by bringing it into contact with successive portions of liquid water at temperatures above 200° but below the temperature at which a single phase is formed. The pressure is above the pressure of saturated steam at the highest temperature employed. Emulsification of the fatty material with the successive portions of liquid water is minimized. Martin H. Ittner, to Colgate-Palmolive-Peet Co. U. S. Patent No. 2,221,799.

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Soap Discoloration

A practical evaluation of the effect of soap antioxidants is made by inhibition of discoloration. The method assumes that the degree of discoloration produced in a soap after storage is a fair measure of the oxidation the soap undergoes. Whether discoloration is due entirely to oxidation or not, prevention of discoloration serves as a good index of the utility to the soap industry of antioxidants.

The method of testing was to grind and mill crude No. 1 white milled soap with 0.1 to 0.2 per cent of stabilizing agent. The resulting soap was then molded into soap samples weighing approximately 20 grams each, and heated in sealed jars at 55°C. for 150 to 350 hours under controlled humidity. The samples were then removed, color and odor stability observed, and compared with a blank of unstabilized soap. The results were classified by color from white (no discoloration) to dark brown, in a total of six steps.

Many compounds which have been suggested and even patented as soap stabilizers are of little or no value. Some of these such as rubber antioxidants have a stabilizing action but in time react with substances present in the soap itself, causing discoloration. Some stabilizers interfere with the perfume bodies present,

when they should stabilize the perfume as well as the soap.

Most natural antioxidants are not suitable for use in white soap for one reason or another; for example, gossypol and carotene would color the soap. Effective inorganic soap stabilizers which offer practical stabilization in concentrations of approximately 0.5 per cent include sodium thiosulfate, magnesium sulfate, magnesium trisilicate, and zinc sulfide. Whatever antioxidant effect may be attributed to rosin is restricted to its protective colloidal properties rather than to any specific chemical function. Of the organic acids usually recommended, aspartic and glutamic are suitable for white milled soap. Antioxidants suitable among phenolic compounds include crystallizable carvacrols, thymol, amyl and diamyl phenol, *para*-cyclohexyl phenol, diisopropylated *ortho* and *para* cresols. Tertiary phenols are subject to patent restrictions.

Remarkable stabilization is often effected through the joint use of two or more unrelated compounds. Alkylated phenols offer excellent starting materials for these. Nitrogen compounds which may be used are acetanilide and its homologues, as well as ketone aromatic amine condensates, highly efficient as antioxidants and low in cost. *Givaudanian*, March, 1941.

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Stable Soap Phases

Reported values for melting points of soaps have differed widely, sometimes by as much as 100° C. This arises in part from the existence of liquid crystalline phases whose formation might have been mistaken for melting to isotropic liquid.

Dilotometric and microscopic studies show that the following stable phases can occur in successive ranges of temperature above that for a crystalline soap and below that for true liquid; Subwaxy, waxy, superwaxy, subneat, and neat. The transition temperatures of sodium salts of the even members of the homologous series of fatty acids have been determined for all of these phases from C_6 to C_{22}. In two instances curves of transition temperatures plotted against length of carbon chain run together, giving rise to a change in the number of stable phases intervening between the normal crystalline form and isotropic liquid. Marjorie J. Vold. Michael Macomber and Robert D. Vold. *J. Am. Chem. Soc.* **63**, 168-75 (1941).

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Peroxide Laundry Bleach

Correctly handled, hydrogen peroxide bleach offers several advantages to the laundryman. It is ideal for silks and wools, where use of sodium hypochlorite proves dangerous. It has also been successfully used on colored work, particularly to clear up white backgrounds in mixed-color pieces. Few plants use peroxide on white loads, though it is also practical for this. *The Laundryman* **7**, No. 1, 5 (1941).

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Boric Fatty Esters

Cleansing and emulsifying agents derived from polyhydroxy alcohols include coconut fatty acid monoglyceride borate, its sulfation and borosulfate derivatives, coconut oil fatty acid hydroxyethyl sorbitol borate, the borosulfate of lauryl glycerine ether, the borosulfonate of coconut oil monoglyceride, and a borosulfonate of coconut oil monoglyceride, decene and naphthalene, and Edeleanu extract of petroleum. Fred W. Muncie, to Colgate-Palmolive-Peet Co. U. S. Patent No. 2,209,634.

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New Soap Forms

Soap in the form of particles aggregated together in the form of sponge-like or coral-like agglomerations avoid the hollow structure heretofore considered essential for a satisfactory flaked or powder-like soap material. Desirable low bulking weight is obtained without the generation of steam within the particles. The extended surface area per unit of weight renders the soap rapidly soluble. It also avoids the dustiness so often annoying to users, and is of an advantageous moisture content, according to U. S. Patent No. 2,152,788, assigned to the Hecker Products Co. of Maplewood, N. J. The product contains principally soap, with no more than 25 per cent of soda ash.

The coral-like soap powder is produced by spraying a soap paste into a current of dry air, which, while effectively drying the composition to the desired extent, does not involve a steam-generating inflating action. The comparatively low temperatures used contribute to ease of control of the process and enable substantial economy in cost of apparatus and drying.

Incorporation of colloidal clay in soap combines excellent lathering properties, ease and rapidity of manufacture, and good keeping properties. Such clay has a beneficial effect in lowering surface tension, increasing adsorptive power, and promoting emulsifying power. Colloidal clay is thus much more than a filler. J. M. Vallance. *Soap, Perfumery & Cosmetics* **13**, 850, 862 (1940).

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Residual Oil in Press Cake

For a rapid determination of the residual oil in press cake mix well in a mortar 2-3 grams of powdered oil cake with 1-2 grams of quartz sand which has been washed with 50 per cent hydrochloric acid and calcined. Transfer to a paper shell and extract with ether in a Soxhlet or similar apparatus for an hour. Expel the ether and dry the oil in the flask by passing filtered air through at 95-100° C. for five minutes. The weight of the flask before and after extraction gives the weight of oil. Tests with linseed, sunflower and cottonseed oils showed that no oxidation or decomposition takes place by the treatment of oils with hot air for a few minutes. P. Zaichenko and E. Semenov. *Masloboino Zhirovoe Delo* **16**, No. 1, 25-7 (1940); through *Chem. Abs.*

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Fatty Acid Separation

Mixtures of liquid and solid fatty acids such as stearic, palmitic and oleic, are separated by melting, cooling on rollers, shaving off and pressing the chips. S. M. Konstantinov and I. O. Laryukov. Russian Patent No. 54,049; through Chem. Abs.

PRODUCTS AND PROCESSES

Organic Detergent

A new detergent is based on *beta*-methyl glycerine, one hydroxyl group of which has been esterified by a long-chained fatty acid, and another hydroxyl group replaced by a sulfonate radical. To produce this, *beta*-methyl glycerine monochlorohydrin is reacted with sodium sulfite, and this product condensed with a long-chained fatty acid. Fred W. Muncie, to Colgate-Palmolive-Peet Co. Canadian Patent No. 395,139.

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Degreasing Composition

A substantially anhydrous, alkaline liquid composition for degreasing and cleaning purposes consists of a water-soluble soap, alkali free or combined as phenolate, an alcohol solvent of the alkali, and a liquid hydrocarbon grease solvent. The liquid is homogeneous and has stability comparable to that of a true solution. Alton F. Curran to The Curran Corp. Canadian Patent No. 395,471.

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Sulfonate Detergents

Unsaturated higher alcohols such as oleyl alcohol are esterified with lower acids such as acetic, propionic, butyric, benzoic, or their acid chlorides. The product is treated with hypochlorite to form hydroxychloro derivatives. These are sulfonated to form emulsifying, penetrating and detergent agents. K. Nakazawa, to Tokyo Senzai K. K. Japanese Patent No. 130,141; through Chem. Abs.

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Soap Cracking

Cracking of toilet soap is believed to be due mainly to uneven pressure in the plodder. Cracking is also more prevalent during very cold weather. It has been recommended that chips be kept at a uniform temperature of 30° C. between mill and plodder. Excess salt, also a contributing factor, can be avoided by careful supervision of saponification. The presence of free glycerine should help prevent cracking. *Am. Perfumer* **42,** No. 3, 52-3 (1941).

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Bottle Sterilization

Compounds suitable for use in cleansing and sterilizing bottles have the general formula R-Hg-R' in which R' represents a radical of a higher fatty compound containing a sulfonic group, and R represents an aromatic radical. Examples are decyl phenylmercuric sulfate and phenylmercuric sulfanilate. C. Johnson and Wm. M. Allison, to Oakite Products, Inc. U. S. Patent No. 2,216,842.

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Petroleum Detergent

Alkyl hydroxy-diphenyl sulfonates useful as detergent and emulsifying compounds are obtained by the chlorination and subsequent treatment of a Pennsylvania petroleum distillate which boils mainly between 170° at atmospheric pressure and 215° at 50 mm. pressure. L. H. Flett, to National Aniline & Chemical Co. U. S. Patent No. 2,223,363.

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Sulfonated Esters

Animal or vegetable fats or oils are esterified with higher alcohols in the presence of a catalyst. The product is sulfonated with fuming or concentrated sulfuric acid or chlorosulfonic acid. A. Mizoguti and U. Onisi, to Ipposya K. K. Japanese Patent No. 130,091; through Chem. Abs.

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Detergent Guanyl Compounds

Products having a bactericidal action are obtainable by the manufacture of guanyl and biguanyl compounds in which the carbon atom of the guanyl group is connected by an amino group with a higher aliphatic radical containing 10-16 carbon atoms. Free dodecylguanidine, melting at 96° C., and its hydrobromide, melting at 82° C., are soluble in water and have detergent properties. Bruno Puetzer, to Winthrop Chemical Co. U. S. Patent No. 2,213,474.

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Emulsifying Agent

A mixture of Turkey-red oil and diammonium phosphate is used as emulsifying agent for hydrocarbons, esters, ketones or terpenes. Z. Hotta. Japanese Patent No. 129,439; through Chem. Abs.

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Sulfonated Alkyl Sulfates

Aliphatic alcohols containing at least 11 carbon atoms in the molecule are esterified with boric acid. The ester is chlorinated by treatment with chlorine, at least one hydrogen atom in the chain being replaced by a chlorine atom without impairing the boric acid radical. The resulting product is stirred energetically for 6-12 hours at 50-65° C. with an excess of an anhydrous sulfonating agent. This causes replacement of at least one of the substituted chlorine atoms and the boric acid radical by sulfuric acid ester groups. The products are useful as washing and penetrating agents. Ernst A. Mauersberger, to American Hyalsol Corp. U. S. Patent No. 2,195,418.

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Recovery of Spent Catalyst

Recovery of nickel from spent catalyst is made by two alternate treatments of the catalyst with 1.5 parts by weight of pure dichloroethane at 70° C. for about a half hour, filtration on a filter press, and removal of the retained solvent by injection of steam. The filtered residue (40-2 kg.) is stirred with 250 liters of water and, after the addition of 110-40 kg. of concentrated sulfuric acid, is heated directly with steam until dissolved. Excess sulfuric acid is neutralized with soda ash, filtered, and the nickel sulfate in the filtrate used for preparation of catalyst as usual. B. Sterlin. Masloboino Zhirovoe Delo **16,** No. 4, 13-16 (1940); through *Chem. Abs.*

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COMPLETE INSTALLATION

for the manufacture of ANY TOILET SOAP

In this way you can be assured of smooth and balanced production and the greatest economy of overhead.

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TYPICAL INSTALLATIONS

Unit No. 101 (right)

Capacities to 600 pounds an hour twice through. Consists of 8" plodder, 3 roll mill, 10" double head plodder, roller board, cutting table and 20 H.P. motor.

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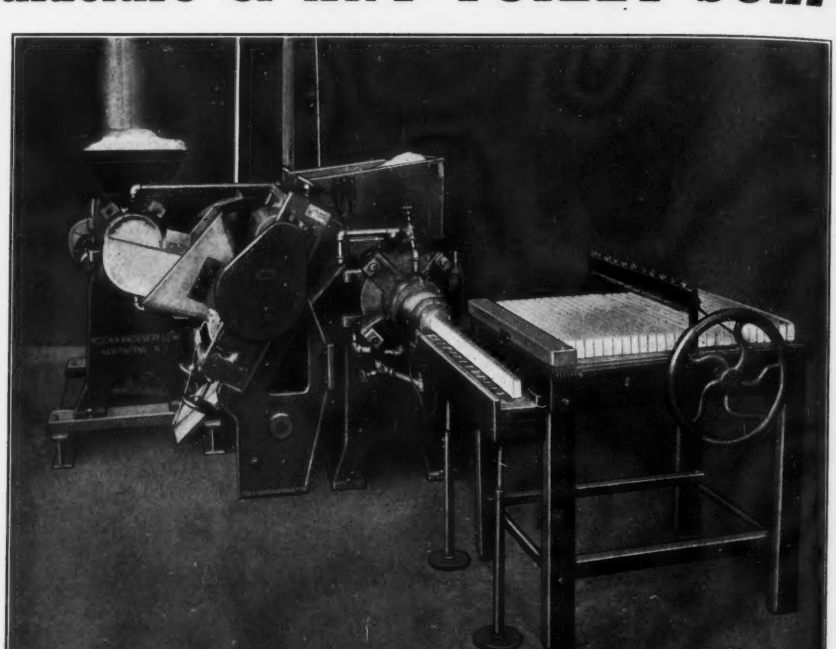
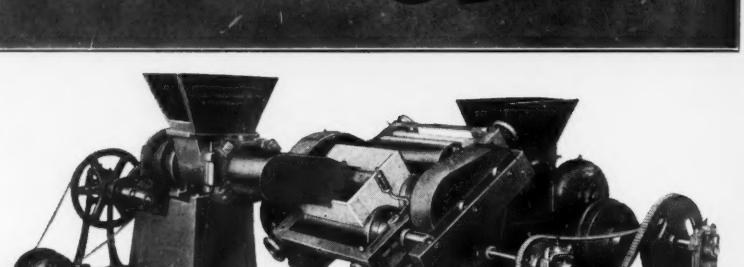
Unit No. 2 (right)

Capacity 500 pounds an hour twice through.

Consists of 8" preliminary plodder, Three-Roll mill, 10" double head plodder and two motors—10 H.P. and 7½ H.P.





Complete Unit No. 3 (left)

Capacity 1,000 pounds an hour once through. Consists of Ideal Amalgamator, Three-Roll mill, 8" preliminary plodder with screen, Three-Roll mill, 8" preliminary plodder, conveying screw with motor, 10 inch finishing plodder with electric heater and forming plate, and automatic cutter.

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No. 2,233,407, Fungicide, patented March 4, 1941 by Lawrence H. Flett, Hamburg, N. Y., assignor to National Aniline & Chemical Company, Inc., New York, N. Y. A fungicidal composition containing as an essential fungicidal constituent a mixture of alkyl phenol sulfonates of the benzene series which differ from each other in the alkyl groups and wherein the alkyl groups are derived from a petroleum distillate which boils mainly within the range 170° to 300° C. at atmospheric pressure.

No. 2,233,812, Germicide, patented March 4, 1941 by Paul Goedrich, Newark, N. J. In a process for preparing germicidal compounds of natural animal bile products and iodine in varying predetermined degrees of viscosity and water insolubility, the steps which comprise adding measured quantities of powdered iodine to a solution of such bile products in water, and subjecting the reaction mixture to heating to temperatures ranging from about 60-100° C., from a time when no more iodine vapors are emitted and up to about 5 hours thereafter and until no further precipitation or solidification results.

No. 2,234,379, Preservation of soap, patented March 11, 1941 by George D. Martin, Nitro, W. Va., assignor to Monsanto Chemical Company, St. Louis, Mo. A soap containing a small proportion of a stabilizer against deterioration and development of rancidity consisting of a halogen ester of phosphorus acid, P(OH)3, containing at least one aromatic carbocyclic ester forming radical linked through oxygen to a phosphorus atom and at least one halogen atom linked to the said phosphorus atom.

No. 2,234,381, Insecticide, patented March 11, 1941 by Clarence L. Moyle and Gerald H. Coleman, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich. An insecticidal composition containing as a toxic ingredient an unsaturated ether compound having the formula $R—O—(CnH_{2}n—O—)\ mCnH_{2}n—_{2}—X$ wherein R represents an aromatic radical, X represents a member of the group consisting of chlorine, bromine, and hydrogen, m is an integer not greater than 4, and n is an integer not greater than 6.

No. 2,235,628, Process of Making Soap, patented March 18, 1941 by Benjamin Clayton, Houston, Tex., assignor to Refining, Inc., Reno, Nev. A continuous process for making soap which comprises the steps of: preheating a saponifiable material to a temperature not substantially below 250° F., and sufficiently high to cause rapid and substantially complete saponification thereof when admixed with a saponifying reagent, mixing a saponifying reagent with said preheated saponifiable material in stream flow and in a zone substantially closed from the atmosphere whereby the saponification of said material is rapidly carried to substantial completion to form soap, thereafter advancing said mixture to a heating zone to rapidly heat the same to a temperature sufficiently high to cause the impurities to be separated in vapor form when said mixture is introduced into a vapor separating zone and above the melting point of soap when said impurities have been separated, introducing the mixture into a separating zone, continuously withdrawing vapors of said impurities and promptly removing the purified soap from said chamber before the same is damaged by high temperatures.

Sulfated Oil Analysis

Analytical results are reported as obtained by different laboratories on a sulfated cod oil with added sulfonated mineral oil, and on a sulfated sperm oil. In the first product the A.S.T.M. gravimetric method does, and the Am. Leather Chemists' Assoc. titration method does not determine the true sulfonates present. The A.L.C.A. method gives lower results for unsaponifiable matter in sulfated sperm oil than the A.S.T.M. method. In the presence of true sulfonates, the A.S.T.M. method for total desulfated fatty matter must be modified by washing with saturated sodium chloride solution. R. E. Porter et al. J. Am. Leather Chem. Assoc. **35,** 402-7 (1940).

Fatty Acid Recovery

Fatty acids produced by the oxidation of hydrocarbons always contain some oxidized fatty acids which do not distill over but represent a loss of material. By treating the fatty acids or their residues with sulfuric acid this loss can be cut down. In an example 100 kg. of fatty acids obtained by oxidation were treated with 1 kg. of 66° Be. sulfuric acid and stirred. The temperature should not be allowed to rise above 120° C., cooling being resorted to if necessary. The mass is then boiled with 30 kg. of water for 15 minutes. It is then washed with water until the wash water fails to give an acid reaction. The reaction product is distilled. The distillation residue before treatment was 12 per cent, after treatment 7 per cent. Hydroxy acids are believed to be converted into unsaturated acids which can be distilled. German Patent No. 689,818; through *Fette und Seifen* **47,** 466 (1940).

Gossypol and Oil Color

To study the effect of increasing concentrations of gossypol on the color of cottonseed oil refined by the alkali method, oil samples were treated with 0.4-2.5 per cent of red and thermally decomposed gossypol, and then refined. The results showed tentatively that with increasing gossypol concentration the color of the oil is greatly intensified, the effect of changed gossypol being greater. A similar color effect is produced on the resulting soapstock. M. Z. Podol'skaya and L. Tobler. Masloboino Zhirovoe Delo **16,** No. 4, 5-7 (1940); through *Chem. Abs.*

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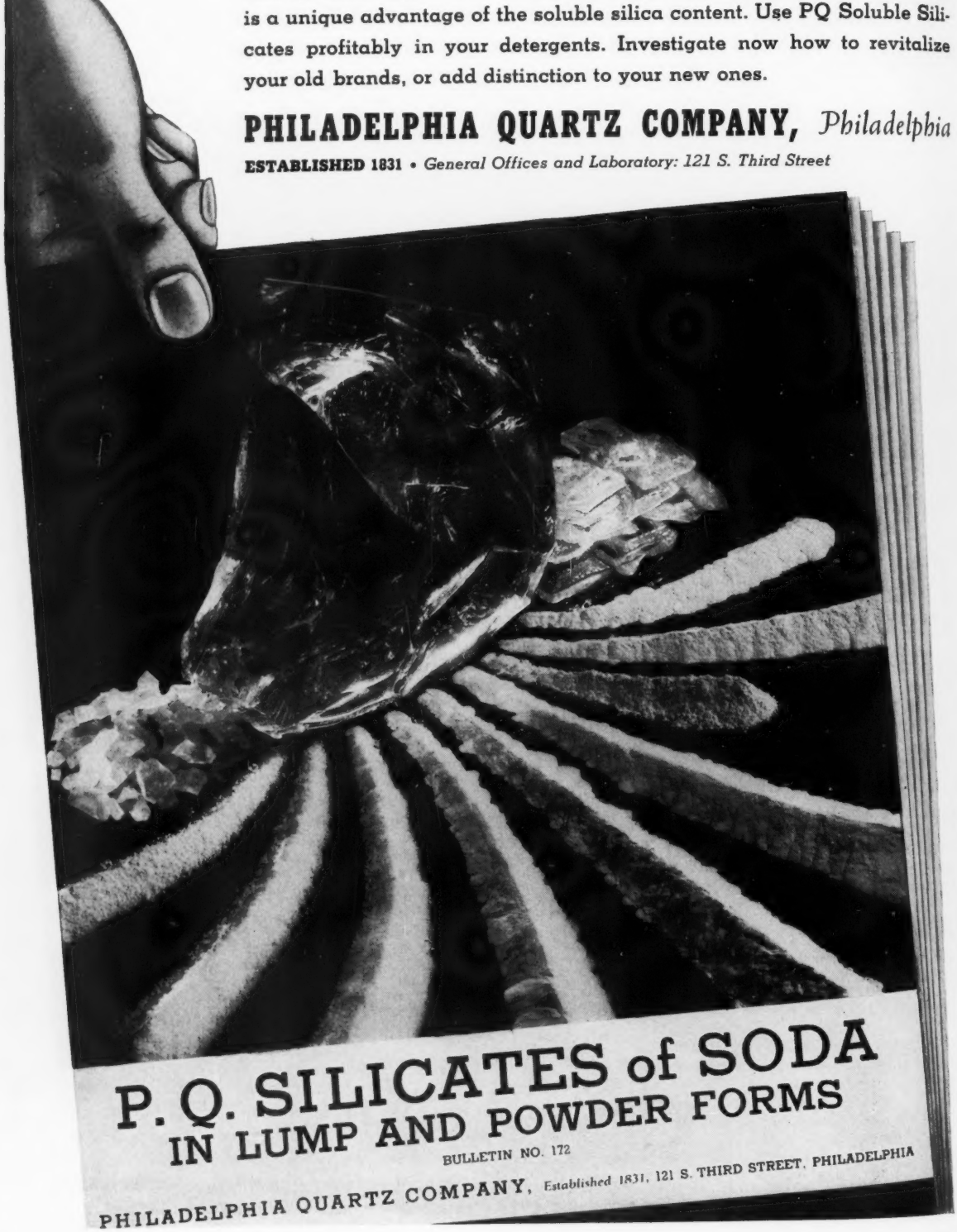
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NEW EQUIPMENT

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

808—Industrial Chemicals

American Cyanamid & Chemical Corp., New York, has just brought out a booklet "Industrial Chemicals" listing products supplied by the company. Articles are classified according to the industries in which they find application and detailed data are given on particular uses.

809—Valves & Steam Cleaners

Bulletins on valves of all types and on two new models of "Hypressure Jenny" steam cleaners have recently been issued by Homestead Valve Manufacturing Co., Coraopolis, Pa. The new steam cleaners are said to be more powerful than previous models and among other new features are included a simplified automatic compound feed, greater portability and simplification of construction and operation. Specifications are given.

812—Perfume Catalog

A wholesale price list "Catalog No. 1" covering perfumes and deodorant oils for sprays, disinfectants, para blocks, liquid soaps, fumigants, polishes and cleaners, has just been issued by Aromatic Products, Inc., New York. Odors are listed according to the type product in which they are used.

811—Essential Oils

Catalog "A" of P. R. Dreyer Inc., New York, containing a complete listing of essential oils and aromatic chemicals, with current prices, is now available. A feature of the new catalog is a list of artificial and synthetic essential oils.

812—Sodium Tetraphosphate

"Quadrafos," sodium tetraphosphate manufactured by Rumford Chemical Works, Rumford, R. I., is described as to properties and uses in a new brochure, Industrial Bulletin No. 64. The brochure lists many industrial applications, and describes the characteristics of the product which make it useful in water conditioning, in controlling corrosion and as a deflocculating agent.

813—Anhydrous Ammonia

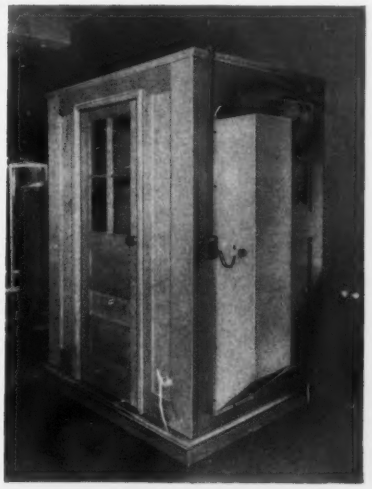
The manufacture of ammonia and its physical and chemical properties are detailed in a bulletin just issued by Mathieson Alkali Works, Inc., New York. Descriptions of ammonia containers and precautions which should be used in handling are also included.

814—Laboratory Hydrometers

George Ruehfel Co., Brooklyn, has just brought out a 28-page catalog of hydrometers and thermometers for a wide variety of laboratory uses. Specifications are given for the line of several hundred instruments and conversion tables for converting specific gravity into degrees Baume, degrees A.P.I., pounds per gallon and per cents by volume of alcohol are also supplied.

815—Odor Control

The creation of a controlled atmospheric area within a laboratory where true odor values can be determined is possible through the use of a booth equipped with the "Dorex" Odor Adsorber, according to the manufacturer, Dorex division of W. B. Connor Engineering Corp., New York. The adsorber employs the principle of the Army gas mask of passing odor-laden air through a bed of activated coconut-shell carbon which purifies the air in the controlled area so that tests on aromatic products can be made free from the influence of attendant smells. Tests can be conducted at intervals of about five min-



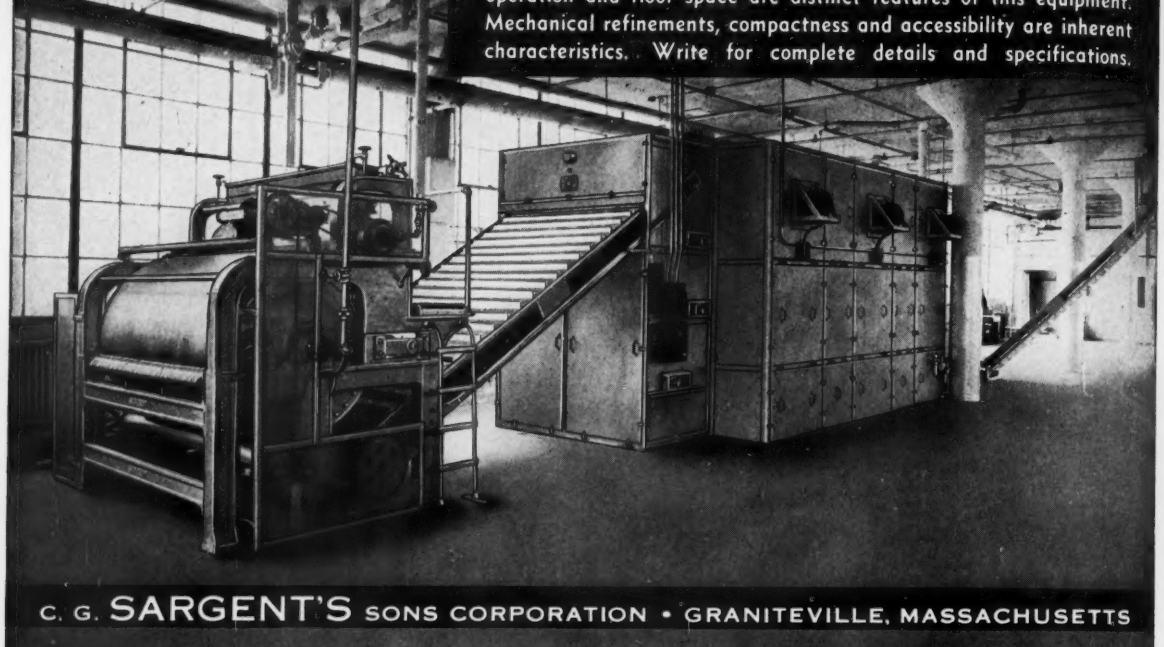
utes, it is said. An installation of this type has just been completed in the laboratory of George Lueders & Co., New York. essential oils.

Absorb Machinery Company

Philadelphia Drying Machinery Co., manufacturers of "Hurricane" drying and finishing machinery, has discontinued business and its patterns, drawings, engineering data, patents and inventory have been bought by Proctor & Schwartz, Inc., Philadelphia. The personnel of the company has also been taken over by Proctor & Schwartz and will operate as the Philadelphia Drying Machinery Division of Proctor & Schwartz, Inc.

New Synthetic Bergamot

A type of synthetic bergamot manufactured from materials which are not likely to go up in price has just been put on the market by Compagnie Parento, Inc., Croton-on-Hudson, N. Y., under the name "Bergamot Synthetic 'A'." The product is said to approximate the natural oil in stability and solubility in alcohol-water solutions as well as in odor characteristics.



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Survey Soap Buying Habits

(*from Page* 31)

though decreasing in consumer popularity from 30.8 per cent in 1940 to 29.8 per cent in 1941. "Ivory," in third place for hands and face use, appears in the second position among the brands for the bath with a popularity of 19.4 per cent, essentially the same as the 1940 popularity of 19.5 per cent. "Lux," the leader among all brands for hands and face, appears in third place in the bath listing. "Lux" is the favorite brand of 17 per cent of all buyers this year as compared with 17.4 per cent in 1940. "Sweetheart" moved up to fourth position for bath use this year by virtue of a gain in popularity from 7.1 per cent to 15.7 per cent. Fifth place goes to "Palmolive" with a consumer preference of 9.2 per cent this year as compared with 13.8 per cent in 1940. "Camay" comes next with a popularity of 7.6 per cent this year as against 9.4 per cent in 1940. "Woodbury," "Gimbels Hardwater" and Colgate's "Cashmere Bouquet" appear next in that order. The remaining sixty-four brands have a combined popularity of 3.8 per cent.

Tooth Pastes

The popularity of tooth paste among Milwaukee families did an about-face in 1941. Tooth paste had been dropping in consumer favor for a good many years, finally declining to a consumer preference of 59.2 per cent in 1940. This year use again started on the upgrade with 61.4 per cent of all families regularly buying tooth paste. It is interesting to note that both tooth powder and liquid dentifrice have fewer users this year.

Continuing the uptrend started in 1939, "Pepsodent" gained more than 6,000 new family users this year and rose to first place in popularity. "Pepsodent" is preferred by 23.9 per cent of all tooth paste buyers this year as compared with 19 per cent in 1940. With a decrease in preference from 25.6 per cent in 1940 to 22.9 per cent in 1941, "Colgate" tooth paste dropped to second place. Third place went to "Ipana" with a gain in popularity from 14.7 per cent in 1940 to 17 per cent in 1941. "Listerine" is in fourth place this year with a popularity of 5 per cent, followed by "Kolynos," "Dr. West's" and "Phillip's" in that order.

Tooth Powder

Tooth powder continues on the downward trend started last year with a decline from 52.4 per cent in 1940 to 50.6 per cent in 1941. In the years prior to 1939, tooth powder had been making steady gains in consumer use. Sixty-two brands were reported in use this year as compared with 66 in 1940 and 77 in 1939. First place among all brands went to "Dr. Lyon's" with a popularity of 54.1 per cent this year. In 1940, 59.5 per cent of all tooth powder buyers preferred "Dr. Lyon's". Making a spectacular gain in popularity from 7:5 per cent in 1940 to 12.2 per cent in 1941, "Pepsodent" moved from third to second place. Third place went to "Colgate" with a gain in popularity from 8.1 per cent in 1940 to 8.3 per cent in 1941. Fourth was "Calox" with a consumer preference of 4.5 per cent.

Liquid Dentifrices

From 22.9 per cent in 1940, the popularity of liquid dentifrice declined to 22 per cent this year. The number of brands in use advanced from 9 in 1940 to 12 in 1941. "Teel" again took first place in preference among buyers of this type of product, although showing a decrease in popularity from 92.8 per cent in 1940 to 79.6 per cent in 1941. Tripling its popularity during the past year, "Cue", in second place, gained from 3 per cent in 1940 to 10.2 per cent in 1941. Third place went to "Pepsodent" with a gain in consumer preference from 4.2 per cent last year to 6.2 per cent this year. "Craig-Martin" which last year accounted for less than 1 per cent of the use of liquid dentifrice in Greater Milwaukee, was preferred by 3.5 per cent of all buyers this year. The eight other brands had a combined popularity of 1.4 per cent.

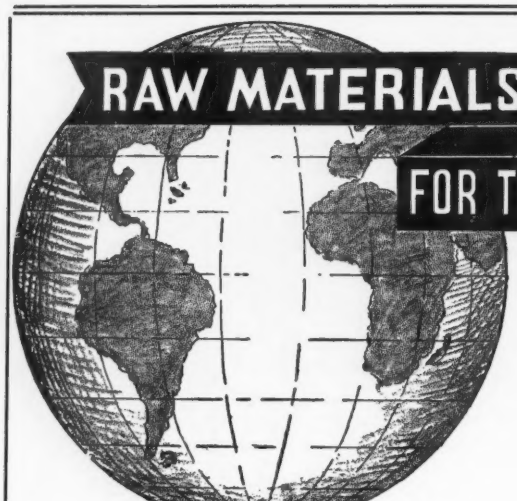
Shaving Creams

Again showing the downward trend that has been apparent for a number of years, lather shaving cream had a popularity of 40.9 per cent this year as compared with 42.9 per cent in 1940, 44.4 per cent in 1939, 47.9 per cent in 1938 and 48.7 per cent in 1937. The lather type cream has its highest popularity among men in the lowest income group with 42.4 per cent buying this product. Use gradually decreases as income increases. In the highest income group, only 39.1 per cent buy regular shaving cream.

In all, only 73 brands were reported in use this year as compared with 92 in 1940. "Palmolive" continues to lead all others with a gain in popularity from 37 per cent in 1940 to 39.8 per cent in 1941. "Lifebuoy," in second place, showed a decrease in preference from 23.2 per cent in 1940 to 18.9 per cent in 1941. "Williams" in third place, is preferred by 11.5 per cent of all buyers of regular shaving cream this year as compared with 12.8 per cent in 1940. "Colgate" is fourth with a gain in consumer use from 6.7 per cent in 1940 to 7.9 per cent in 1941. "Mennen" appears in fifth place and "Gilette" in sixth place with consumer preferences of 6.3 per cent and 2.9 per cent respectively.

Brushless shaving creams increased slightly in popularity from 26.6 per cent in 1940 to 21 per cent in 1941. These figures are compared with popularities of little better than 18 per cent in the three years prior to 1940. In the uppermost income bracket, 24.4 per cent use brushless shaving creams as compared with 18.3 per cent in the lowest income group.

Of the 56 brands reported in use this year, "Burma Shave" again holds first place with an increase in preference from 18.6 per cent in 1940 to 20.5 per cent in 1941. "Barbasol" in second place, has a consumer preference of 18.2 per cent this year as compared with 21.1 per cent in 1940. Third in popularity is "Molle" with a consumer accept-



RAW MATERIALS 1838-1941

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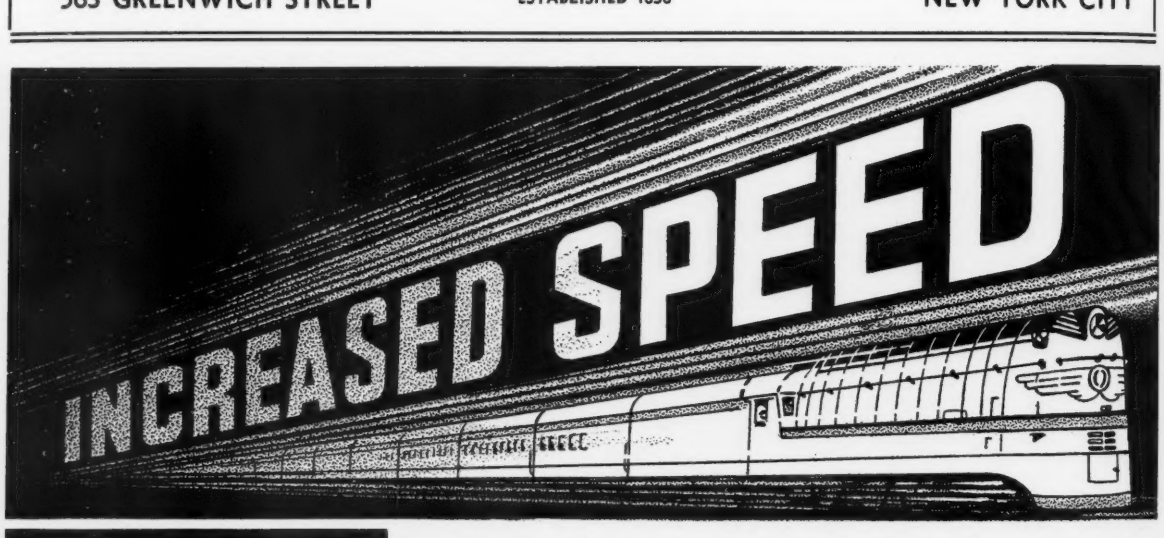

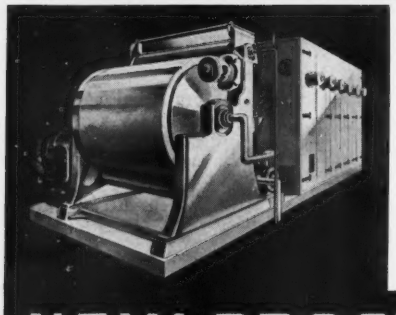

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NEW PROCTOR *Flake Soap* SYSTEM

ance this year of 17 per cent, about the same as last year. "Palmolive" is listed next with a gain in popularity from 14.4 per cent in 1940 to 15.9 per cent in 1941. Fifth is "Koolox" with a popularity of 4.4 per cent this year.

Liquid Shampoos

One out of every two Greater Milwaukee families buys liquid shampoo according to the 1941 survey. This compares with 47 per cent in 1940. In the lowest income group, the highest popularity is noted, with 52.4 per cent of such families buying shampoo. In the uppermost income bracket, only 45.3 per cent of the families surveyed buy liquid shampoo.

In all, 192 different brands of liquid shampoo were reported in use in 1941. "Drene" the leader among all brands, showed a decrease in preference from 32.7 per cent in 1940 to 29.9 per cent in 1941. "Fitch's" strengthened its hold on second place with a gain in preference from 17.2 per cent in 1940 to 20.2 per cent in 1941. This brand has been gaining users steadily during the last four years. "Watkins," sold on a house-to-house basis, is preferred by 13.9 per cent of all buyers this year as compared to 16 per cent in 1940.

Water Softeners

This year the use of soap crystals and water softeners declined to 28.6 per cent from the popularity last year of 31.8 per cent of all families. "Climalene" the number one brand, continued to gain popularity this year, advancing from 59 per cent in 1940 to 65.6 per cent in 1941. Second place went to "No Name" despite a decrease in preference from 10.2 per cent in 1940 to 7.5 per cent in 1941. "Melo" strengthened its hold on third place, by increasing in popularity from 3.4 per cent in 1940 to 5.6 per cent in 1941.

Toilet Bowl Cleansers

A survey of toilet bowl cleansers was taken this year for the first time since 1938. In that year, 63.2 per cent of all families bought toilet bowl cleansers, while this year 63 per cent regularly buy the product. Making a gain in popularity from 45.7 per cent in 1938 to 48.4 per cent in 1941. "Bowlene" took first place in preference. "Sani-Flush" the leader in 1938, is in second place this year with a consumer preference of 47.5 per cent as compared with 50.8 per cent in 1938. "Vanish" is in third place with a popularity of 2.1 per cent.

Paint Cleaners

(*From Page* 27)

chlorite solution—ordinary chlorine bleach—could be added to a cleaning liquid in a concentration equivalent to 1 per cent of available chlorine. Such a solution has to be alkaline to prevent the decomposition of the hypochlorite, which means that it would tend to make the paint dull, but that is not of first importance in places where the use of such a product would be appropriate. Sodium hypochlorite is not sold in powder form, so that in making up a powder the patented phosphate - hypochlorite compound may be used, or solid sodium chlorite, $NaClO_2$, a compound similar in bleaching action to hypochlorite. Sodium chlorite has been made commercially available as a solid chemical only within the last year or so.

Somewhat related to paint cleaners are a few other types of products which will be discussed only briefly. One is a powdered material containing about 90 per cent gum arabic and 10 per cent gelatin. Stirred into water to make a thick paste, this is applied to walls to fill in the pores and give a smooth surface. Such a dried gum film can be washed with plain water.

Rust remover for paint to remove rust stains around radiators, etc., is sold, consisting of powdered oxalic acid. Dissolved in water this can be used to remove rust spots wherever they occur, whether on paint, tile, porcelain or fabric. The only place where oxalic acid should not be used to remove iron stains is in the kitchen sink, as this consists of vitreous enamel which is alkaline in character and which would be attacked by any acid, even oxalic acid. The porcelain in the bathroom, on the other hand, is an acid type of material and is not injured by oxalic acid. Whenever used, directions for products containing oxalic acid should emphasize complete rinsing with clear water.

Paper Cleaners

PRODUCTS developed especially for removing soiled spots from wallpaper, window shades, and calcimine, are putty-like pastes which are kneaded into soft balls before being rubbed over the soil. The latter is removed by adsorption only, no detergent action being involved. Calcimine, such as that used on the ceilings, has to be treated the same as wallpaper as it is not a true paint, but is originally dispersed in water and hence wet and loosened by water. These special cleaners have a base of 35-40 per cent ordinary flour, 15-18 per cent common salt, 1 per cent of kerosene or mineral oil or perhaps linseed oil, with 40-50 per cent of water. The pastes are usually colored and may be perfumed. A 12-ounce can of one such product sells for 10 cents. While the demand for these cleaners is a minor one, they do meet special requirements because of their non-wetting and harmless character.

The possibilities suggested by the variations in the specific products discussed leave the compounder free to use his own ideas. Often knowing what the other fellow is doing enables one to work out a product based on the same principles, but not necessarily having the same composition. What a resourceful person needs to know is what the different ingredients are, what they can be expected to do, and how each may improve or fail to improve a product.

Soap Scrap

(*From Page* 23)

complished is in reducing the scrap to small particles, in which state it will be much easier to re-boil and time will be saved.

In practically all cases it is either impractical or inadvisable to attempt to make a refinish from a charge of 100 per cent scrap. It could, for instance, be refinished and then added to a fresh run of soap, or a fresh charge of fats can be made from the re-boiled scrap. In either case, the scrap should be reconditioned by several washes before the fresh stock is added. It goes without saying that the lower the percentage of reconditioned scrap in proportion to the fresh stock, the better the mixture. Some perfumes are practically impossible to eliminate or destroy in reconditioning scrap soaps.

In most cases the brine solution drawn off from a wash from scrap soap, will have no value for the glycerine recovery department, since it might contain filler, coloring matter, and other undesirable materials. The possible exception may be that the scrap has come from soap made by the cold or semi-boiled process, and have some value for glycerine recovery. Even here there may be a question of value, due, for instance, to large percentage of filling material.

In conclusion it can be said that each plant represents a different problem and must be worked out to fit existing conditions and type of product, and there can be no fixed set of rules or specific percentages given. Two good rules are (1) keep down the percentage of scrap, and (2) keep the scrap clean,—it pays!

—— • ——

Detergent Value

(*From Page* 29)

temperatures, the solubility of low titre soaps in the saturated series is so much increased, that they lose completely the properties of colloids and their detergent efficiency is low. Sodium caprate, the molecule of which has 10 C atoms, forms hardly any lather and is almost a true solution. The highest detergency value of the different soaps is found close to the point where the soaps leave the colloidal state and turn insoluble, near to the molecule of sodium palmitate or at the bottom of the parabolas.

Among the soaps of the unsaturated series, with 18 C atoms, sodium oleate is the ideal soap, giving best results at room temperature with or without alkalies. The higher the number of unsaturated groups in the C-18 molecule, the lower is the titre of the corresponding soap, and the lower is its detergent value. Another effect decreasing the value of these low titre soaps is oxidation of the unsaturated groups by exposure to air and heat.

Sodium oleate with one unsaturated group is comparatively difficult to oxidize, but sodium linoleate with two unsaturated groups and sodium linolenate with three unsaturated groups oxidize readily and lose with progressing oxidation their detergent value. A completely oxidized linoleic or linolenic acid is insoluble in petroleum ether, soluble in hot water and 70 per cent alcohol, and as sodium soap forms no permanent lather. When a second unsaturated group is oxidized in a C-18 soap molecule, this reduces the colloidal state of the soap so much that it loses its foaming qualities. This is the case with sodium ricinoleate, the main constituent of castor oil soap.

Tall oil soaps, containing about 30 per cent rosin acid soap are known to form soap spots in laundries. The addition of about the same amount of tetrasodium pyrophosphate will prevent this formation by increasing the solubility of the rosin acid soap and turning it into a quite useful soap. As seen in the table, no permanent lather is produced with sodium "rosinate" in hard water at room temperature, but the addition of tetrasodium pyrophosphate improves this soap more than any other one, increasing soap saving at least five times.

Sodium stearate, hardly soluble in hard water, forms only a thin lather at room temperature, but at 160°F. a rich lather. Sodium oleate, easy soluble in hard water forms a rich lather at room temperature and a thin lather at 160°F. A mixture of both as found in tallow soaps and in other high titre soaps forms an ideal laundry soap which can be used at either 70° or 160°F.

The addition of bentonite to laundry soaps increases the friction between soap solution and the material to be cleaned and may result in better cleaning, especially in washing greasy rags and overalls, but as bentonite also increases the hardness of water, according to tests, more soap and alkalies are necessary if a permanent lather is kept up in the laundry wheel.

The titration test suggested above can be applied to the approximate determination of soap value in different soap and alkali mixtures, as in soap powders which contain a high percentage of alkali, such as soda ash and silicates. For this test, a 1 per cent solution is made up, the titration made as above and the result compared with a standard soap, as a 1 per cent sodium stearate or sodium palmitate solution.

The titration with a 1 per cent sodium palmitate solution gives the degree of hardness of the water, the cc. figure obtained by titration indicating approximately the degree in U. S. grain hardness. For further comparative titrations, the same water has to be used, and needless to say, rust and other solid impurities eliminated.

Various commercial soaps contain materials which may affect the titration. On some of these, I obtained the following results with water of 1.6 grains U. S. hardness: (At room temperature unless otherwise indicated.)

Sodium palm oil soap, 1%...1.9 cc.
Sodium tallow soap, 1%.....2.0 cc.
Sodium peanut oil soap, 1%..2.1 cc.
Sodium corn oil soap, 1%....2.2 cc.
Sodium coconut oil soap, 1%.3.8 cc.
Sodium coconut oil soap, 1% at 120°F. .....4.7 cc.
Sodium tall oil soap, crude, 1% .....3.8 cc.
Sodium tall oil soap, crude, 1% at 120°F.....4.7 cc.
Sodium tall oil soap, ref. 1%.2.8 cc.

Addition of glycerine to the 58.3 cc. water used in the test did not affect titrations, indicating that glycerine has no detergent value.

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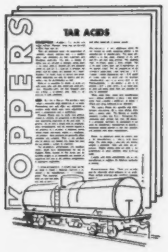

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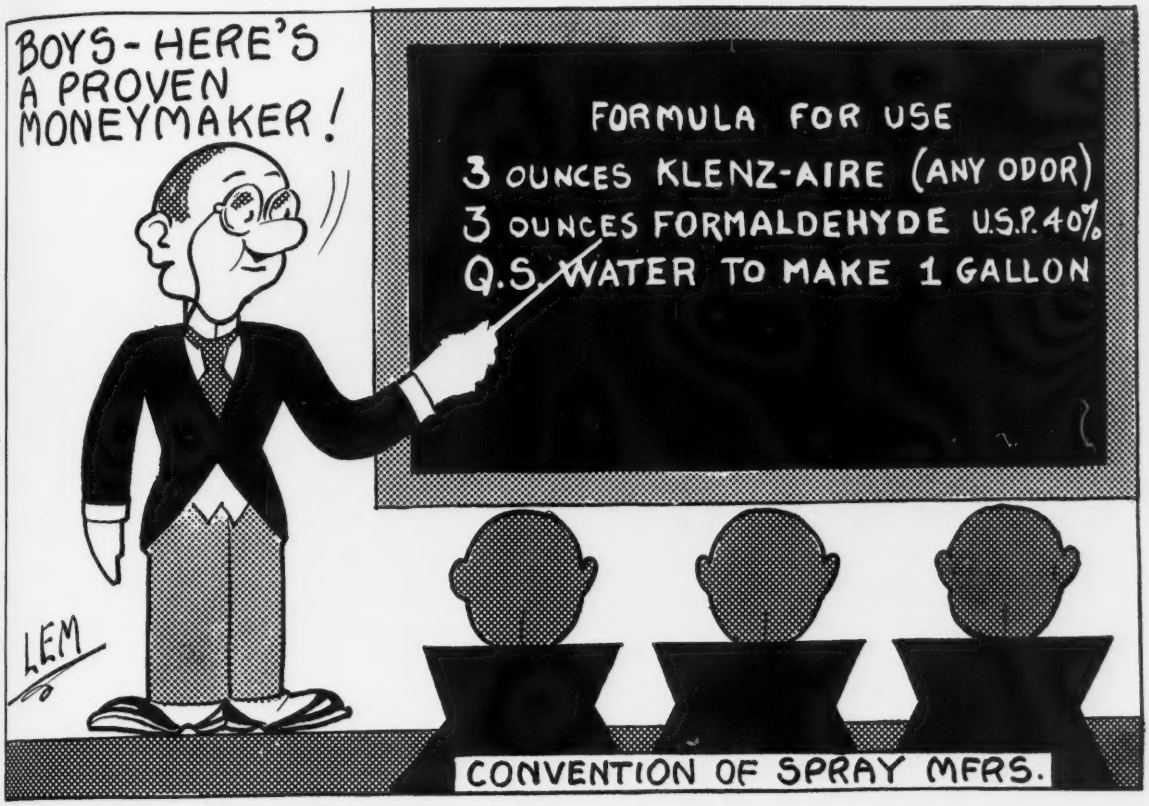
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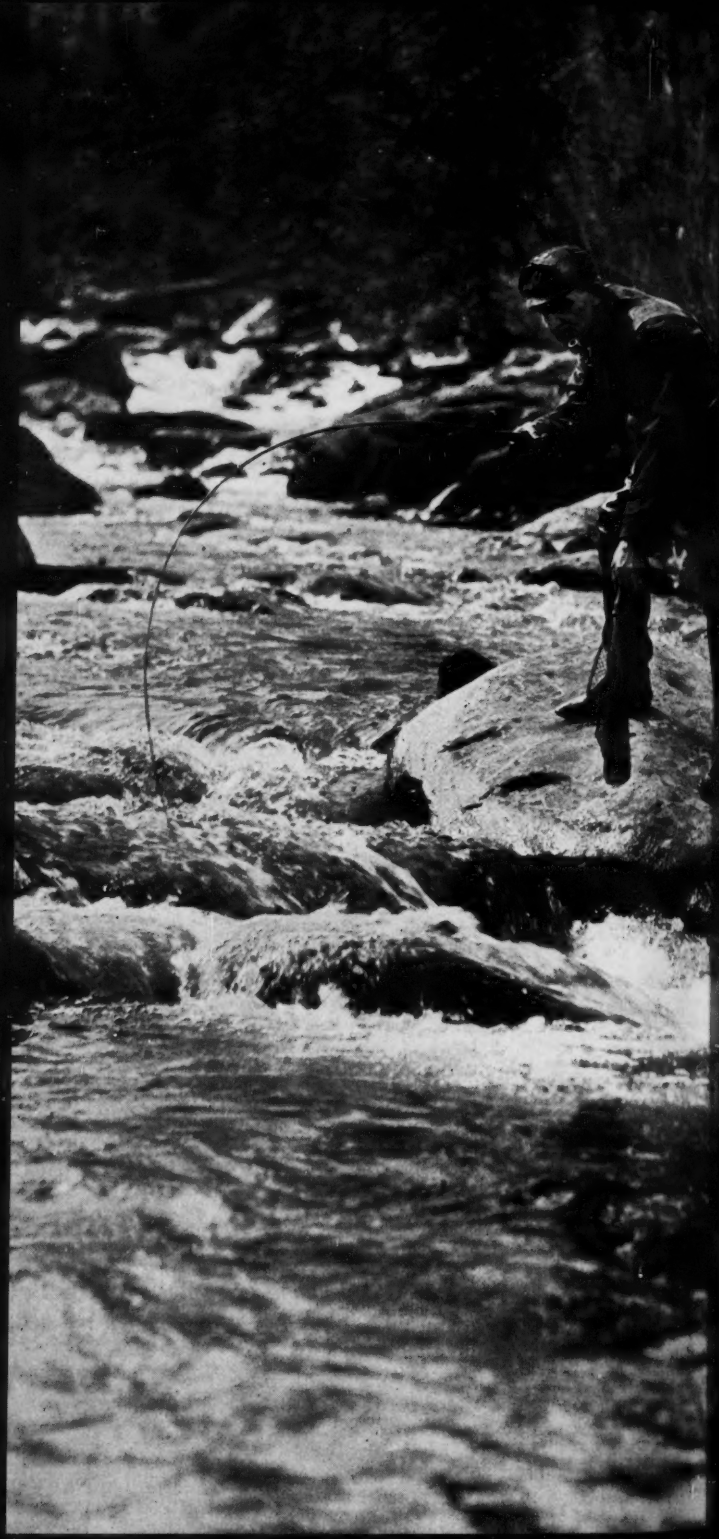

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Scrub women don't buy disinfectants, you may say, but they can influence sales. After all, your superintendents of buildings are only human. Constant squawks can get under their skins.

By the same token, the approval of these guardians of cleanliness helps confirm the judgment of those who do the actual buying. So get the scrub women on your side. Let Yarmor* 302 put the fragrance of the pines in your general disinfectants, scrubbing soaps, and cleaners. It will also add to their effectiveness.

The booklet illustrated will help sell the advantages of Yarmor-disinfectants to consumers. You're at liberty to use any or all of it in your own sales literature. Write for a copy.

DISINFECTANTS MADE WITH YARMOR 302 PINE OIL ACCORDING TO THE PRESCRIBED DIRECTIONS:

1 Have a clear, sparkling, amber color.

2 Produce a snowy-white emulsion in water.

3 Are free from suspended matter. This denotes uniformity.

4 Are non-toxic to man when handled as a disinfectant.

5 Do not stain when in diluted form.

6 Are effective preparation for general disinfection except when necessary to combat pus-forming organisms.

7 Leave a clean, piney odor wherever applied.

*Reg. U. S. Pat. Off. QQ-86

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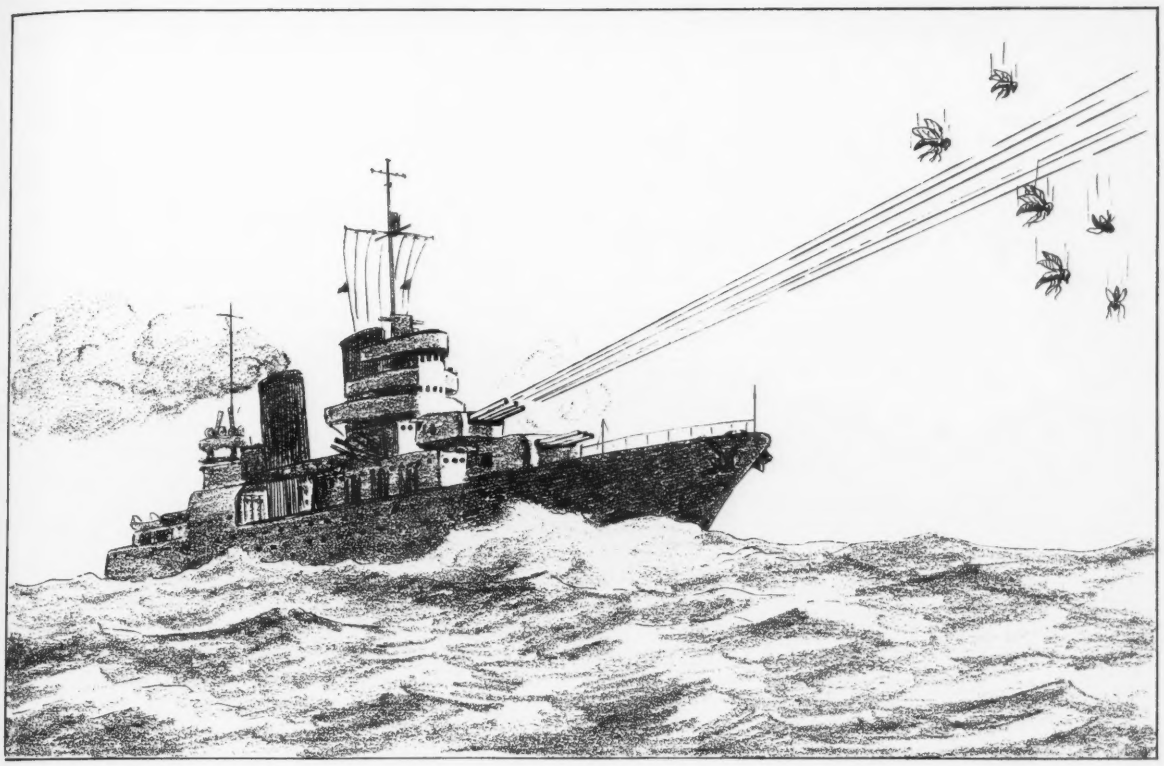

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A cloud of flies would need a convoy to get through the withering blast of an insecticide based on Prentiss Pyrethrum Extract! For here is an extract that is high in the "killing power" that distinguishes preparations with a high pyrethrin content.

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You are assured of this by selecting Prentiss Pyrethrum Concentrate as the basis for your 1941 model spray. Let a better spray this year increase your share in next year's market.

R. J. Prentiss & Co., Inc.

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WHEN a consumer uses your spray, he wants action . . . wants to see the flies spin to the floor at once. If your spray does this job . . . and keeps the flies down, the consumer is satisfied . . . he buys your spray again . . . he tells his friends about it . . . your sales grow.

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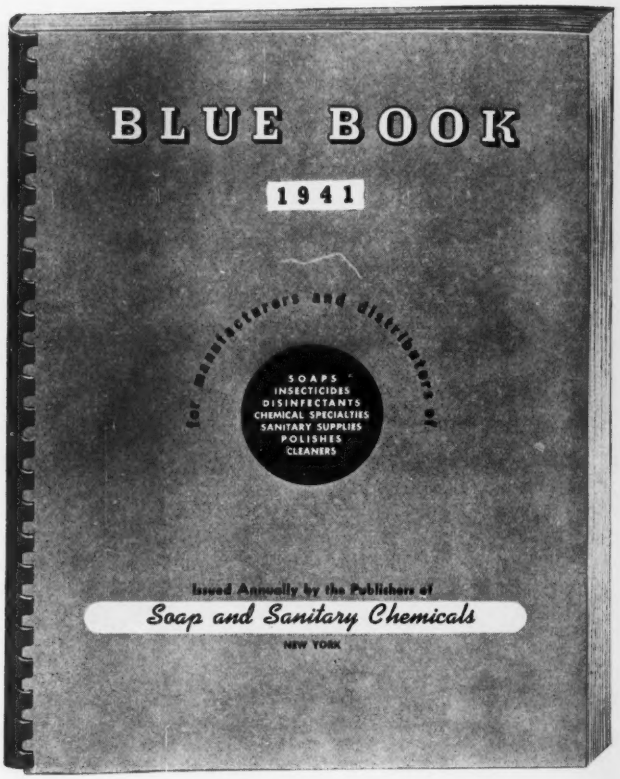

Contents of the New 1941 BLUE BOOK

Cold Process Soaps—offering suggestions on various aspects of cold process soap manufacture.

Dry Mixing—Commenting on mixers and the mixing of bath salts, para crystals, detergents, sweeping compounds, etc.

Auto and Furniture Polishes—A review of typical formulas.

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Insecticide Perfuming—Suggestions for evaluating suitability, masking power, persistence, etc., of insecticide odors.

Floor Cleaning—A study of materials and methods for the maintenance of wood, marble, tile, terrazzo, cork, linoleum, concrete, asphalt and rubber floors.

Label Taboos—What label statements have been tabooed by the Federal Trade Commission for soaps, insecticides, scouring powders, disinfectants, deodorants, cleaning fluids, etc.

Window and Glass Cleaners—A review of the types of products offered, with suggestions on their formulation.

Specifications—A resume of U. S. specifications for soaps, polishes, waxes, cleaners, etc.

Testing Methods—Official methods of N.A.I.D.M. for testing insecticides and disinfectants.

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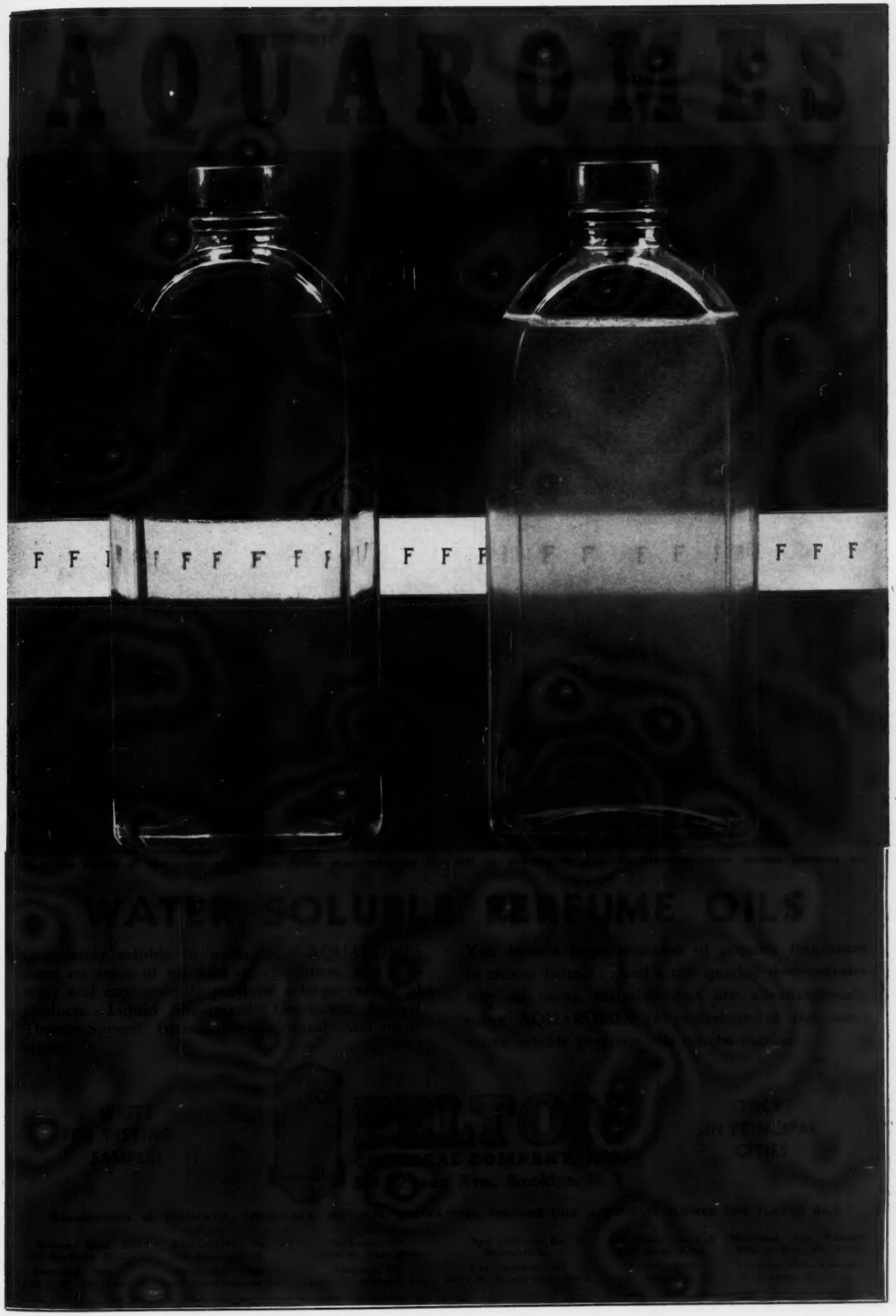
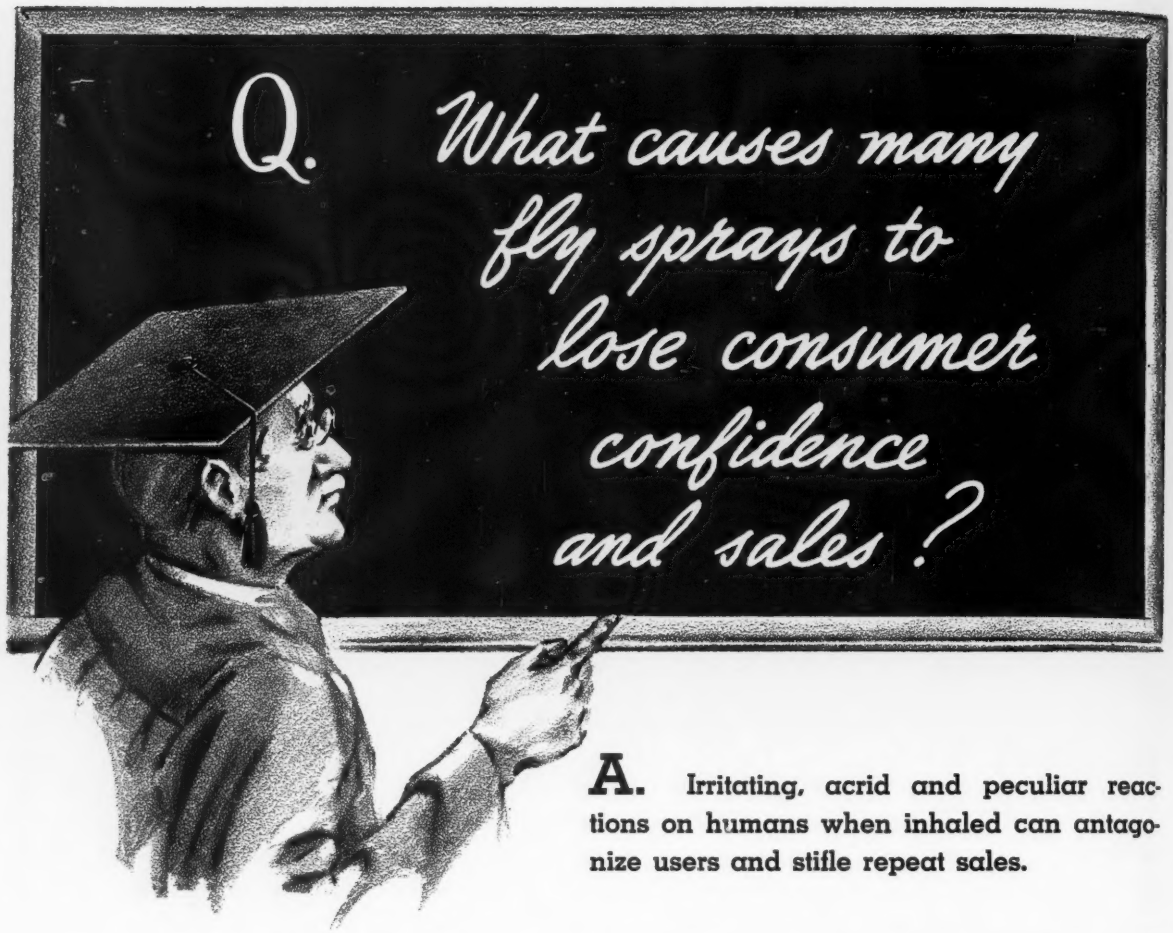

AQUAROMES
WATER SOLUBLE PERFUME OILS



A. Irritating, acrid and peculiar reactions on humans when inhaled can antagonize users and stifle repeat sales.

Q. *What effective insecticides do not cause objectionable irritation to human breathing passages?*

A. Those made with pyrethrum extracts have never been known to cause such unfavorable reactions. Penick's PYREFUME, the pure perfected pyrethrum extract—when diluted as recommended—fares very well with Mrs. Insecticide User. So does the tremendous knock-down-and-kill power of PYREFUME against, not alone houseflies, but also roaches, bed bugs, fabric moths and silver fish.

Q. *Do sprays made with PYREFUME now cost less than previously?*

A. Yes, the price of pure pyrethrum extract has been reduced 1/3 in the past two years. Today, therefore, it is economical to use PYREFUME . . . for greater consumer satisfaction through time-tested insecticidal action and low cost.

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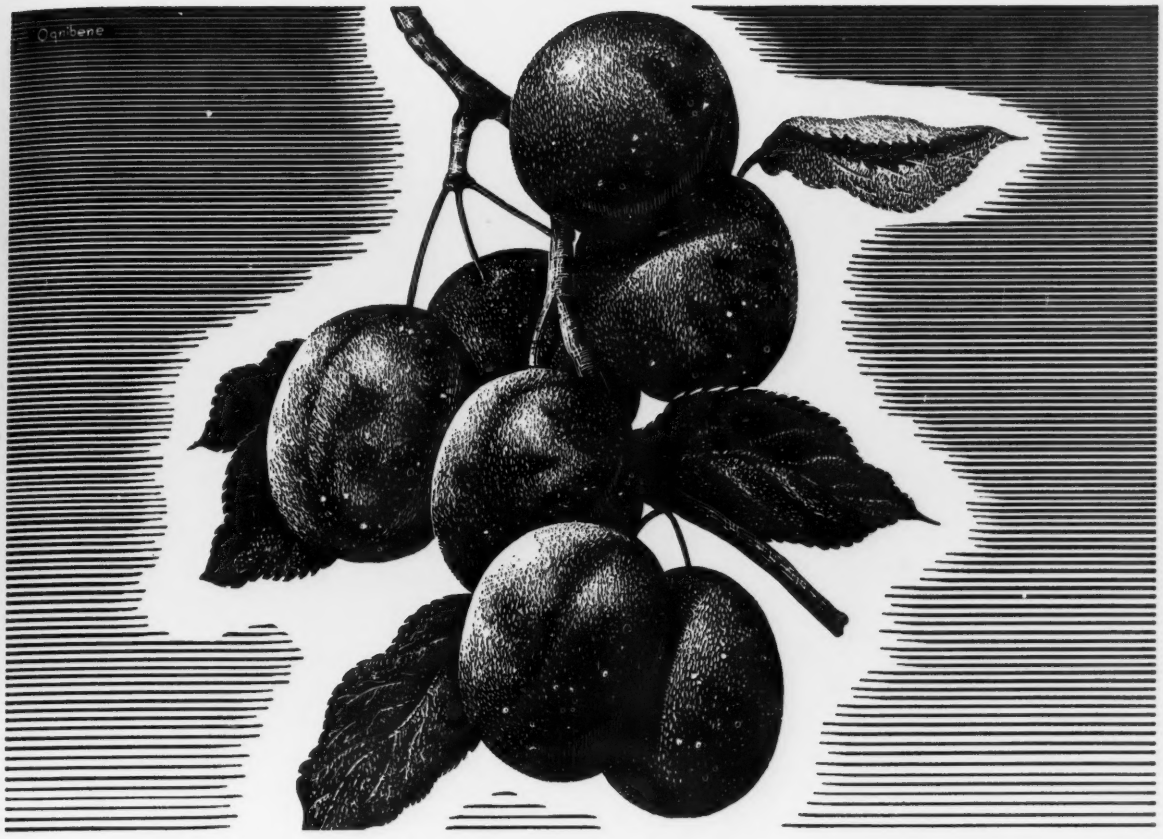

Right from the Ground Up

In products of the factory, as in products of the earth, the manufacturer reaps what he sows. They both must be *right* from the ground up. In manufactured products that means thoroughly reliable raw materials. Niagara Alkali Company has provided such materials to mills and plants in many industries for more than three decades. They have helped to produce fine quality products in great variety. Users have learned to rely on Niagara as a thoroughly dependable, consistently helpful source of supply for Caustic Soda, Caustic Potash and Carbonate of Potash.

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CAUSTIC SODA
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COAL TAR DISINFECTANTS: This type of disinfectant is furnished in phenol coefficients ranging from 2 to 24 F.D.A. Method. Perfect emulsions, guaranteed stability, trouble free in cold weather. Uniformity at all times makes these disinfectants the finest produced.

PINE OIL DISINFECTANTS: These fragrant odored disinfectants are manufactured from finest quality steam distilled Pine Oil under expert chemical and bacteriological supervision. Uniform at all times, form perfect milky-white emulsions in water, impart fragrant pine scent wherever used. Offered in coefficient strengths ranging from 2 to 7 inclusive. Guaranteed and tested by the F.D.A. Method of test.

CRESYLIC DISINFECTANTS: These disinfectants are recommended for hospital, surgical and veterinary use, meet Bureau of Standards Specifications, offered in phenol coefficients ranging from 4 to 6 F.D.A. Method of Test, form crystal clear solutions in ordinary tap water.

ALKYL PHENOL DISINFECTANTS: These newly developed disinfectants are offered with phenol coefficients ranging from 2 to 34 F.D.A. Method. Can be had in either soluble or emulsifiable types.

BAC-TROL GERMICIDE: This unusual and different disinfectant is offered in coefficient 3 and 5 F.D.A. Has a distinctively different, pleasant odor enabling it to be used where other disinfectants would not be permitted. Forms milky-white emulsions in water, is stable under all conditions, uniform at all times. Obtainable in one quart and one gallon beautifully lithographed containers at extremely low prices. Available also in bulk for private brand packaging.

CREOSOTE OILS: Several grades are offered to meet specifications. For wood-preserving purposes, insecticidal uses, etc., we particularly recommend our No. 1 Refined Creosote Oil. Trouble free from sludge or separation even in sub-freezing weather. Low cost, excellent coverage and staining properties.

CRUDE CARBOLIC ACIDS: Furnished in strengths ranging from 15% tar acids to 50% tar acids. Clear, water and sludge-free oils which have been "chilled" to remove as much naphthalene as possible. Excellent as a farm insecticide.

CRESYLIC ACIDS: Of domestic and English manufacture ranging in tar acid content from 90% to 100%. Most popular grade 99/100% pale. Useful in manufacture of liquid insecticides, disinfectants, formaldehyde and other condensation products.

PES-TOX FLY SPRAY: Furnished either odorless or perfumed type. Grade A and AA by the Peet Grady Method of Test. Pleasantly scented when desired, guaranteed efficiency.

BUG-TOX INSECTICIDE: This product is particularly recommended for the killing of hard-shelled crawling insects. Contains no Pyrethrum. Furnished with jasmine, rose, or vanilla odor. Kills bedbugs, roaches, etc. quickly and surely.

PYRETHRUM CONCENTRATE No. 20: Either odorless or kerosene base. Guaranteed to contain a minimum of 2 grams Pyrethrins per 100 cc. Guaranteed to be stable, uniform and to form clear insecticide when diluted with proper base oil.

CRESTALL FLUID — CRESOL COMPOUND USP — CATTLE SPRAYS — WEEVIL KILLER—MOTH KILLER—TIC-TOX ARSENICAL DIP—TAR ACID OILS—LIQUID SOAPS — LIQUID AUTOMOTIVE CLEANER AND SPECIALTY PRODUCTS.

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SANITARY PRODUCTS

A SECTION OF SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

UNIV OF IDAHO

RECENTLY, the Army Medical Corps issued a call for bids on 150,000 gallons of U.S.P. Cresol Compound. The U.S.P. cresol necessary to produce any such quantity of compound is just not available in this country. In short, the order cannot be filled. The Army will probably have to buy a cresylic disinfectant, — sometimes termed technical cresol compound,—if they have not already done so. Furthermore, a cresylic disinfectant is equally satisfactory for every application where U.S.P. material might be used, besides costing less than half and being readily available in large quantities. So, why is it that not only the Army, but other medical units as well, invariably specify U.S.P. Cresol Compound when a cresylic disinfectant is equal or better from every angle?

ALREADY, the pressure of the defense program is being felt in the sanitary products industries. Especially in the case of devices used in dispensing or applying various sanitary chemicals, we find that manufacturers are having difficulty with parts. In other cases, certain raw materials are difficult to obtain in full quantities. But, of course, we suppose that this is to be expected under present circumstances. At the same time, in the flush of this feverish activity, we want to remind manufacturers, both suppliers and buyers, that "there will come a day" when all this is past and over,—and then, when orders are not so plentiful, it will be from the regular channels of the trade that they will come. Wise men will be guided accordingly.

NEW state laws of all kinds are being ground from the country's legislative mills with ever increasing activity,—a hopeless confusion of legislation and proposed legislation which would befuddle a Philadelphia lawyer. Truly, a blizzard of legislation has descended upon us, and is still descending.

Of interest among these many new proposed laws are those on the subject of insecticides, caustic poisons, and chemicals. With one exception, we have yet to discover a really well and expertly drawn law among the bunch. Many of them show no close knowledge of the materials which they hope to regulate, and must be classified definitely as bad laws, children of honest but ignorant parents. The only hope is that they may die aborning and never get on the statute books.

There is no wonder that the never-ending parade of these proposed laws eventually causes resentment among manufacturers to well up to the explosion point. Their protests unfortunately go mostly unheard, for in the eyes of a true legislative crusader, no manufacturer could have the slightest honest intention in opposing any legislation. But bad laws are bad laws, and the fight against them should not be allowed to lag!

SANITARY PRODUCTS
on the Poultry Farm

AS A market for disinfectants and insecticides, poultry raising ranks as one of the most important in the United States. Some idea of the size of the poultry field can be had from the estimated figure of 600,000,000 chickens in the United States, over four times as many chickens as there are people. Poultry produce twenty-two dozen eggs annually for every man, woman and child in the country. Except for milk, cattle and hogs, the gross income from poultry is greater than from any other farm commodity. These facts are in themselves impressive but they become still more impressive from the viewpoint of the manufacturer of disinfectants and insecticides when the extreme importance of sanitation and the prevention of disease in poultry plants as an economic factor is taken into consideration.

A high mortality rate is an outstanding problem to the chicken grower. It is not unusual for losses in certain sections of the country to exceed 30 per cent in a year, while the so-called "standard" mortality of a flock is placed at about 12 per cent. —a much too high figure in the light of all that is known about poultry diseases and how they can be prevented. Mortality is the greatest single handicap to poultry raising as it is with any other form of live stock, yet a great deal of the death loss in poultry is avoidable and can be checked through sanitation and other preventive measures. It is delay and neglect, *the lack of information on what methods and materials to use*, and the failure to recognize the problems as they present themselves, that keep the mortality rate high.

The chicken, as a species, is remarkable in that it is subject to more *known* diseases than any other organism on the face of the earth. Its pathology has been studied exhaus-

In the U. S., there are estimated to be 600,000,000 chickens, representing a large market for disinfectants, insecticides, and other such sanitary products.

Photo Ralston Purina

Sanitation is true economy in chicken farming, reducing losses through disease. Spraying a hen house with insecticide is illustrated.

tively. More is known about its diseases and how they can be checked, its parasites, both external and internal, and its anatomy than is known about human beings. But in spite of this mass of knowledge, poultry mortality remains at an uneconomically high level and every year the problems of disease and parasite control, particularly in the leading poultry centers, become more and more difficult. Each year, hundreds of poultrymen are put out of business by their inability to raise and keep stock healthy. There are too many dirty and unsanitary poultry plants. These are the plants where most of the trouble occurs with disease and parasites.

True, not all of the diseases to which poultry is subject can be prevented through improved sanitation. Causative agents are, of course, varied. Some diseases are caused by faulty breeding or by congenital transmission. Others are due to various food deficiencies, to the wrong type of food, to irregular feeding, to improper housing, etc. That is another story.

However, most poultry diseases can be prevented either through the adoption of rather rigid sanitation programs or by vaccination or medication. It is with the first-named and probably the most important group of diseases that we are concerned. This group includes the preventable diseases and the diseases caused by parasites.

There are certain conditions that are very closely and in fact generally associated with unsanitary conditions. These conditions are frequently spoken of as preventable diseases. They are practically all caused by infection of some kind and include such diseases as coccidiosis, (which is the most serious poultry disease) fowl cholera, fowl typhoid, infectious bronchitis, roup, etc. Most, if not all, of these diseases could be effectively prevented by observing adequate sanitary precautions,—which simply means the cleaning and disinfecting of the poultry house and equipment and the isolation and quarantine or slaughter of diseased birds.

An effective sanitary program includes measures for the control of lice and mites, the most common external parasites affecting poultry. Other insects, too, because they may be carriers or hosts to organisms responsible for poultry diseases, should also be controlled. The common ant, earthworms, beetles, slugs, fleas, grasshoppers, black flies, house flies, mosquitoes, cockroaches and ticks are included in this category.

As far as sanitation is concerned, the poultry flock shares with swine the distinction of being the most poorly housed and the most poorly managed of all the farm livestock. In too many poultry flocks, the shelters are cleaned only once or twice a year, disinfectants and insecticides being used sparingly, if at all, with the result that the chicken houses become filthy, and mites and lice abound.

The more progressive poultry owners thoroughly clean their poultry houses as often as is necessary to keep them in good condition. But there are not enough progressive poultry owners and today one of the greatest needs of the industry is better sanitary conditions. This is particularly true among the smaller plants, for the small flock owners frequently give the excuse that they "don't have time to keep the plant in shape." So few of these poultrymen realize that they could make more money in a year, with less risk, by keeping fewer chickens and taking better care of them.

Disease prevention is a far more important factor in poultry keeping than any amount of attempted cure after the disease has once taken hold in a flock. Drugs and medicinal agents can seldom be used to advantage in the treatment of poultry diseases for the value of the individual bird is so small that it is not worth while to spend much time or money in individual treatment. It is often more profitable to remove, kill and burn any bird showing signs of serious illness rather than attempt a cure. If "cured" birds are put back into the flock they often become diseased again or what is worse, carry the disease to other members of the flock. It is a truism, therefore, that prevention is much more important than medication, and on a well managed poultry plant there is a frequent, regular and almost constant need for a reliable and effective disinfectant.

The poultryman's choice of a disinfectant is influenced to a great extent by cost. Effort is being put

forth by government agencies and state agricultural experiment stations to educate the poultryman to base his selection on phenol coefficient as well as on cost but the process of education is a slow one. This can readily be understood when it is realized that 85 per cent of all farms in the United States have flocks of chickens and a great majority of the flocks, particularly in the South, are small ones.

Among the most commonly used disinfectants and sanitation products in the poultry field are the following:

Coal tar disinfectants, ordinary coef. 2, used in 2 per cent solution in water. Cresol compound, technical, in 3 per cent to 4 per cent solution in water.

Chloride of lime, 5 per cent in water.

Formalin (40 per cent solution of formaldehyde in water) used in 8 per cent to 10 per cent solution in water.

Lye, (caustic soda) used in 2 per cent to 3 per cent solution in water.

Bichloride of mercury, one part to 1000 solution in water.

Sodium hypochlorite, in 5 per cent solution in water.

Sodium orthophenylphenate, in 1 per cent solution in water.

Cresylic acid, 90 per cent in 2 per cent to 3 per cent solution in kerosene.

In addition to the above disinfectants, many commercially compounded materials are widely used in poultry sanitation. Stock dips in 6 per cent solution are also used as poultry disinfectants. For whitewashing the insides of chicken houses, commercial preparations consisting of lime to which a coal tar disinfectant has been added are on the market. An example of a homemade disinfectant whitewash used by poultrymen is compounded as follows: 5 quarts of cream of lime, (made with 10 pounds quicklime and 2 gallons water), 1 quart of kerosene, 1 pint of coal tar disinfectant and 6½ quarts of hot water, all mixed together with 1 pound of lard. The lard is added to help make the preparation stick to the walls, ceilings and floors on which it is sprayed or painted. A cup of salt is also added to each five buckets before applying.

A similar formulation for whitewash is as follows: 5 parts of cream of lime, one-half part of disinfectant, 1 part of kerosene and 6½ parts of water. The lime is slaked by placing it in a pail and pouring the water over it. Then the other materials are added. One ounce of alum is added to 1 gallon of the whitewash to prevent it from rubbing off, and the addition of 1 pint of molasses to 5 gallons of the wash will cause it better to penetrate wood. A pound of soap dissolved in 1 gallon of boiling water and added to 5 gallons of the whitewash will give it a gloss.

A whitewash formaldehyde disinfectant is made by including a full strength U.S.P. formaldehyde in the formula: 7 pounds of slaked lime, 6 ounces of salt and 6 ounces of formaldehyde in 10 quarts of water.

IN flocks in which there has been no previous outbreak of contagious disease, the program of sanitation is fairly simple for the poultryman provided he is willing to follow it regularly. A flock kept under ideal conditions will not be greatly troubled with disease, intestinal parasites, lice, mites or fleas, as cleanliness is a prime factor in such conditions. The poultry house should be cleaned and disinfected regularly. It should have at least two thorough cleaning and disinfectant treatments every year. Dropping boards should be cleaned at least twice a week and every day if possible; litter should be changed before it becomes damp or dirty, and floors should always be disinfected when the litter is changed; drinking fountains should be cleaned every day and should be scrubbed and disinfected thoroughly once a week. There is almost a constant need for a good disinfectant.

Thorough cleaning of a poultry house entails the removal of all litter and dirt, scrubbing all inside surfaces of the house with a hot lye solution and, after this has dried, spraying, scrubbing or painting the surfaces with either a disinfectant or a whitewash-disinfectant combination. The lime itself, of course, has no disinfecting value, but it improves the appearance of the house and also serves to indicate whether or not complete coverage with disinfectant has been obtained.

Once an infectious disease is discovered in a flock, the diseased birds must be removed immediately from contact with the rest of the flock and the healthy birds treated to prevent further outbreak. Treatment depends on the nature of the disease. It generally includes thorough cleaning and disinfecting of quarters at once. The litter is removed and burned. Floors and side walls, fountains and feeders are scrubbed with a hot lye solution, using one pound of lye to each 15 gallons of boiling water. Then floors and side walls are treated with stock dip solution or other disinfectant. In cases where the causative agent is a virus, it is well to keep the inside of the house wet for two or three days before the chickens are returned to the quarters.

Neither should chickens be allowed to return to areas of soil which have become infected until the areas have been turned or plowed and the action of the sun and air has had time to kill the parasites and disease in the ground. Disinfectants cannot usually be employed effectively to kill disease organisms in the soil as the area involved is so large. Nor is the use of lime efficaceous in such cases as lime merely tends to make the soil neutral or only slightly alkaline (unless tremendous quantities are used) and disease organisms thrive best under nearly neutral conditions. The lower critical pH for disease organisms in the soil is about 6.2; a pH lower than this is generally fatal to the infectious organisms.

In preparing a house for baby chicks, cleanliness and freedom of the premises from contagious diseases is particularly important. The most common chick diseases of the preventable type are bacillary white

diarrhea (pullorum disease) and coccidiosis. With thorough cleaning and disinfecting, it is possible to keep these diseases under control if the chicks are normally healthy to start with, and there is little excuse for the poultry owner who permits healthy baby chicks to contract these diseases because of his failure to clean and disinfect the quarters in which they are kept.

To a great extent, the preventive measures described above are effective in the control of parasites, both external and internal. Some 40 or 50 species of bird lice (of the order *Mallophaga*, or chewing lice) occur on poultry. The commoner species are: the head louse, probably the most injurious species to young chicks; the wing louse, which is found under the primary feathers of the wings; the fluff louse; the large hen louse; the small body louse; and the common large louse of the hen, which is perhaps the most common species of all. The other important class of external parasites of poultry are the mites (family *Acarina*, class *Arachnida*) of which there are many species, the most common being: the common chicken mite; the scaley leg mite; the depluming mite; and the "feather mite."

WHEN prevention fails it is necessary to resort to treatment. In the control of poultry lice, dusts, dips, greasy ointments and vapors are all commonly employed. Dusts are reported to be the most effective and lasting and the least expensive. Whatever method is used, two treatments about ten days apart are usually necessary, the second treatment being needed to kill the newly hatched lice which were not killed in the first treatment. Dusts employed for this purpose are combinations of finely ground sulfur, pyrethrum, derris, rotenone, orthophenylphenate, tobacco dust, phenothiazine, sodium fluoride, sodium fluosilicate, or mixtures such as one part of sodium fluoride with three parts of road dust, or one part of sodium fluosilicate with three parts of finely ground phosphate rock, or one part of cresylic acid and three parts of gasoline mixed with 16 parts of plaster of paris. Dusts are applied to each individual bird by the "pinch method" ordinarily.

When dips are used for controlling lice, there is danger of the chickens catching cold and they should be used only in warm weather when there is no breeze. Common dips are sodium fluoride or sodium fluosilicate solution, about one ounce to the gallon, soap solution in the same concentration, powdered derris in the ratio of one ounce to the gallon and a kerosene emulsion consisting of one-half pound of soap, 2 gallons of kerosene and 9 gallons of water. Each bird is dipped separately.

FLOOR WAXES

Their composition, manufacture, equipment, characteristics, specifications, analysis, —a series of two articles by Dr. E. G. Thomssen and Dr. J. R. Johns will be published beginning in the next issue of SOAP & SANITARY CHEMICALS. If you are a wax manufacturer, don't miss them!

Ointment applications may be carbolated petrolatum, or lard, or a mixture of one part of mercury ointment with two parts of petrolatum. Fumigating and use of vapors to control lice on poultry is reported generally dangerous. Nicotine sulfate solution is used successfully but even this has been reported fatal to chickens in cases of insufficient circulation of air or poor ventilation. However, nicotine is held by many authorities to be the most effective treatment.

In controlling the common chicken mite, or red mite, wood preservers having anthracene oil as a base are most effective. These should be diluted one-half with kerosene to insure a proper consistency for spraying into the cracks and crevices where the chicken mites hide during the day. Also used but less effective, are 10 per cent solution of coal tar dips, 4 per cent solutions of nicotine sulfate, 3 per cent solutions of miscible tree spray oil, straight kerosene or kerosene emulsions, arsenical dips, lime-sulfur solutions or whitewash containing 5 per cent of crude carbolic acid.

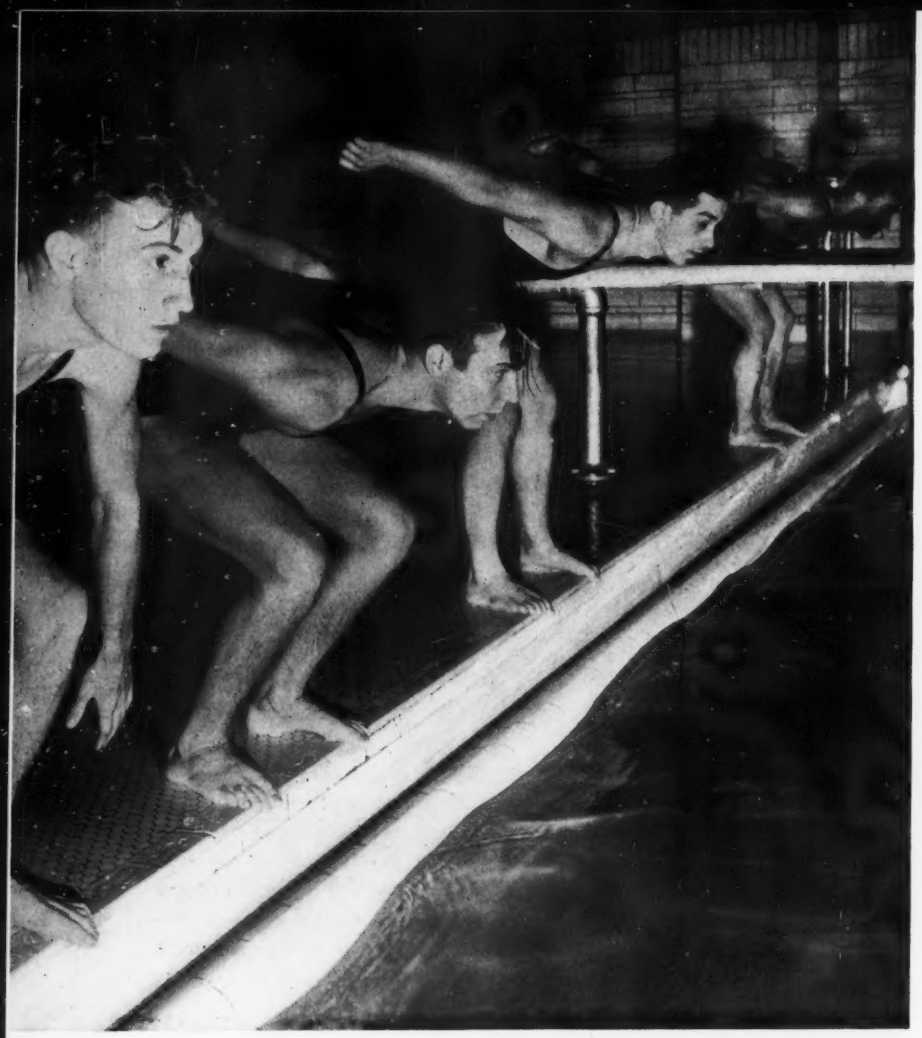
The scaley leg mite, which causes irritation of the legs of poultry, and the depluming mite are controlled usually by first scrubbing the legs with warm water and soap to soften the scales and then applying sulfur-petrolatum ointment or oil of caraway-petrolatum ointment.

The "feather mite," one of the most prevalent poultry pests, is controlled with sulfur dust, sulfur-soap suspensions used as a dip, or nicotine sulfate solution.

Little is known about the transmission of contagious diseases through biting pests, but it is believed that many diseases are carried to poultry in this way. Ticks and mosquitoes are known to be carriers of certain diseases and too much emphasis cannot be placed on the eradication of biting pests of all types.

In addition to the many external parasites, poultry are affected by numerous internal parasites as well, notably the intestinal worms of which many species are found in poultry. The prevention of intestinal parasites, particularly tape worms, is much more satisfactory than their control. Although there are a number of drugs used for their control, none is known that will give anywhere near 100 per cent complete elimination of tape worms in a flock. In the case of round worms, however, there are a number of materials which give highly efficient results. Recent investigations have been made with phenothiazine, rotenone, and pyrethrum extracts with promising results. But essentially prevention rather than cure should be the aim of the poultryman in dealing with all parasites,—and this can be best attained by keeping the ground clean and dry, through use of insecticides and disinfectants of a non-poisonous nature to chickens, and the elimination of all

(*Turn to Page* 109)



Swimming pools, locker rooms, hotel bathrooms,—in fact every surface touched by human feet,—is a potential spreader of offensive Athlete's Foot.

SINCE athlete's foot is about as prevalent as the common cold, and about as welcome as the "seven-year itch," it is to be expected that a host of agents are offered for its treatment. As yet no one agent seems to be the perfect answer, possibly because so many factors are involved in the cure of the disease,—so that new products continue to be investigated in the hope of finding something genuinely effective.

As to figures on the incidence of athlete's foot, physical examinations made in the public schools of Detroit showed that about 75 per cent of the twelfth-grade school children had the disease, with smaller figures for the lower grades down to an average of 7 per cent in the first grade[1]. Opinion based on many routine studies states that almost all adult persons in this country have the infection either constantly or at intervals[2].

Although most people have already acquired a "smattering of ignorance" on the subject, it is to the interest of the manufacturer who wishes to develop or sell a preventive or remedy to know as much as possible about the disease. Athlete's foot, or in medical terms, ringworm, is a parasitic skin disease in which the parasites are fungi or molds, minute plant organisms lacking in chlorophyll. These particular fungi live on dead skin and thrive best in warm moist surroundings. Bits of skin sloughed off between the toes form a perfect base for growth, so that once started, the disease is apt to make greatest progress there. Often it may spread from the toes to the soles of the feet. The disease may also be found on the hands occasionally, and on hairy parts of the body. Accompanied by itching, the small nodules which first appear, if unattended, develop into serious skin eruptions with the formation of pustules and large blisters.

Fungi are more resistant to attack than bacteria, at least ordinary bacteria. Among the specific fungi which have been isolated and identified from cultures taken from patients with the disease are the following:

Epidermophyton interdigitale
Epidermophyton inguinale
Epidermophyton floccosum
Epidermophyton rubrum
Epidermophyton gypseum
Epidermophyton cruris
Trichophyton rosaceum
Trichophyton purpureum
Monilia albicans

Of these, pure cultures of either *E. interdigitale* or *T. rosaceum* have been used most commonly as the test organism in laboratory experiments, being considered representative and as resistant to attack as any in the group.

AGENTS suitable for the treatment of athlete's foot are those which attack or destroy the fungi and their spores, the latter being the seeds by which they fructify. The type of agent and method of treatment depend on the state of the disease, whether advanced or mild. In the advanced stages the skin is highly inflamed, very sensitive and subject to irritation, so that the gentlest possible treatment must be applied[2].

When a person is actually disabled, continuous application of wet dressings is the usual treatment. Liquids which have been used include a 1:10 dilution of Burrow's solution

ATHLETE'S FOOT...

A discussion of its occurrence, prevention, control, and test methods

By Dr. Samuel D. Epstein

which contains aluminum acetate, calamine lotion which is a shake lotion of suspended zinc oxide containing pink iron oxide, in glycerine and lime water,—a 0.25 per cent solution of silver nitrate, tincture of iodine diluted to 0.5-1 per cent in 50 per cent alcohol, 1:6000-1:30,000 potassium permanganate solution, saturated boric acid solution, and a 1:1000 solution of resorcinol.

These liquids are mild antiseptics in the dilutions given, their purpose being to attack the fungi without injuring inflamed tissue. In order to get as much penetration as possible, dead skin is rubbed off or cut away without lacerating living tissue. Since the solution can only affect the part with which it comes in contact, removal of dead skin is important.

A great mistake sometimes made by people applying self-medication is to use agents in too high a concentration in the belief that the more it hurts, the faster the cure. If this is done, more harm than good usually results.

Somewhat similar in action to wet dressings is the use of a foot-bath once or twice a day by people who are not actually disabled. When a solution of chlorine bleach is used in this way for self treatment of sore and inflamed feet, the maximum concentration to be recommended would appear to be 0.1 per cent of available chlorine,—less if the alkalinity of the solution causes irritation. Under these conditions, a dilute solution with a longer period of contact is preferable to a strong solution used for a few minutes only. Like chlorine bleach, Whitfield's lotion has been used under conditions where it was harmful. As most commonly made, this contains about 6 per cent of salicylic acid and 12 per cent of benzoic acid, in alcohol. Whitfield's ointment contains the same concentration of the two organic acids in a mixture of wool fat and petrolatum[3]. Medical opinion states that some fungicides, "particularly those that contain salicylic acid," if too long continued, in themselves cause irritation and the formation of lesions[4]. Experience suggests that Whitfield's lotion or ointment is too harsh for treatment in the acute stage.

In the less severe or sub-acute stage, the toes are apt to become scaly and dry, the problem being to loosen and remove scales without injury to living tissue, so that the curative agent can reach the more deep-seated fungi. Powders, lotions and pastes aid in promoting the peeling off of scales. Whitfield's ointment, stated to be especially effective for this dry condition, is best mixed with equal parts of petrolatum or of zinc oxide ointment as a diluent.[2,5] Sometimes the sub-acute form of the disease presents a moist, soggy appearance. For this condition, alcoholic lotions are helpful in drying up the tissue while attacking the fungi. The diluted tincture of iodine mentioned above should be very effective for this.

Powders are probably more suitable for the treatment of mild rather than advanced cases, although clinical cure was claimed in four weeks in two orphanages where a proprietary powder was applied as the only curative agent, the children rubbing the powder into the affected parts themselves.[6] An obvious advantage of a powder is that it can be kept in continuous use with minimum inconvenience and loss of time to the patient. Powders applied in the dormant stage of the disease are said to be helpful because of their adsorption of moisture, thus aiding in keeping the feet free from perspiration. Zinc stearate or zinc oxide is often used in this way.

IN gymnasia, swimming pools, locker rooms, hotel bath rooms, etc., where numbers of people walk about in their bare feet, precautions are often taken to prevent the spread of athlete's foot. Fungi on bits of skin rubbed off the feet of an infected person on the floor or in the shower, retain their virulence for long periods of time, and are a source of infection to others. The common and well-known method of combatting spread of the disease is to install shallow foot baths containing a fairly high concentration of chlorine bleach or other strong fungicide, in passages leading to showers or to swimming pools.

At Purdue University a study was made of the deterioration of

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sodium hypochlorite solution used in this way.[7] In a foot bath holding 13 gallons of sodium hypochlorite solution containing 1 per cent of available chlorine, made up fresh daily and used by 400 students during the 24-hour period, the hypochlorite decreased in available chlorine content during that time to 0.4 per cent. This was considered to allow a wide margin of safety, confirmed by laboratory tests and by a marked decrease in the incidence of the disease among the students after this procedure was adopted.

Floors can be kept free of fungi by frequent scrubbing, and as a growing practice in many institutions and gymnasia, a fungicidal agent is added to the scrub water. Important, also, is the complete drying of the floor before re-use.

A NUMBER of products have been used for treating athlete's foot which later have proved to be of no value. Of immense help to the manufacturer would be a reliable, standard laboratory procedure for evaluating fungicidal activity. Although a number of methods have been suggested, no one has been agreed upon among bacteriologists as acceptable as a standard. Even without a standard technique, laboratory methods are useful in determining whether a product has fungicidal activity, and how much, so that the product may be sold in the proper concentration or with definite instructions as to proper dilution.

In a method recently proposed and still under consideration by the Disinfectant Scientific Committee of the National Association of Insecticide and Disinfectant Manufacturers, *Trichophyton rosaceum* destroyed by 1-70 phenol in 10 minutes but not by 1-90 phenol in that time, serves as the test organism. A broth containing 4 per cent of maltose and 1 per cent of peptone is poured over glass beads in bottles and inoculated from a stock culture of *T. rosaceum*. After incubation at 28°C. for 10 days, the bottles are shaken vigorously and mixed with sterile normal saline solution, after which the liquid is strained through a special 200-mesh Monel metal sieve. The test suspension is standardized to contain 1,500,000 spores per cc.

In testing fungicides, 0.5 cc. of the standard inoculum is added to 5 cc. of disinfectant solution. After 1, 5 and 10 minutes, a 4 mm. loopful of this mixture is inoculated into tubes containing 10 cc. of the broth described. Products to be used in foot baths should destroy the inoculating fungicide in 1 minute; products used for general disinfection should destroy the same amount of inoculum in 10 minutes. The temperature of medication is 20°C. The temperature of incubation is 28°C. for 10 days.

In a somewhat similar method[8] a broth containing 1 per cent of Karo syrup and adjusted to pH 5.0-5.2 is suggested for subculture, with incubation of subcultures at 30°C. The special advantage of these two procedures is in the inoculum, which maintains its phenol-resistance and other characteristics unchanged for a long time.

Possibly the question should be raised as to the advisability of making phenol the reference standard for the killing power of fungicides. Compounds closely related to phenol are widely used as disinfectants for killing bacteria, so that phenol is a logical reference standard in bacteriological work. But may not the use of phenol coefficient for disinfectants as now determined by the accepted F.D.A. method, and a new designation for fungicidal power also based on phenol as reference standard, lead to confusion?

Laboratory results have proved that there is no correlation between the accepted or traditional phenol coefficient, and fungicidal activity.[9] Of three common industrial disinfectants, all having a phenol coefficient of 6, two were less effective than phenol itself, and one much more effective than phenol, against *T. rosaceum*.

An argument in favor of a phenol standard is that fungicidal studies are related closely enough to bacteriological studies so that the former may be considered as merely an expansion in the same field. Having the same standard might then be considered a simplification. An argument against a phenol standard in fungicidal work is that other compounds are much more widely used as fungicides so that a standard based on one of these would have more meaning to the person interested in practical use. Perhaps comparison with a definite concentration of sodium hypochlorite solution or a definite concentration of salicylic acid, would have greater significance to the buyers of fungicidal products. At any rate these considerations would appear to deserve some thought while fungicidal technique is still in the discussion stage.

Wide departure from practical conditions of the proposed N.A.I.D.M. method would seem a valid criticism. In this method, the fungicide is mixed with a fluid suspension of the spores, thus providing a condition of maximum contact and optimum fungicidal action, where in actual use the fungicide is applied to the surface layer only of spores and mycelium embedded in the skin. Also the fungicide-spore mixture is transferred directly for subculture, where it might possibly have an inhibitory effect.

A method by Burlingame and Reddish which meets these criticisms and offers other advantages uses five test organisms. *E. interdigitale*, *T. purpureum*, *T. gypseum*, *E. inguinale*, and *T. rosaceum*.[10] Each organism is streaked over the entire surface of Sabouraud's agar in a Petri dish, using a dry sterile cotton swab inoculated with cultures of the organisms which had been grown on agar for 5 days at room temperature. After incubation at room temperature for 5 days, the agar cultures are cut into 1 cm. squares or 1 cm. disks. The fungicide to be tested is poured over the surface of the cultures so as to flood the

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plates. After 5, 15, and 30 minutes one of the squares or disks is removed from each plate and placed in 10 cc. of sterile broth. Excess fungicide is washed out of the matted culture by shaking lightly. After 5 minutes the block of culture is removed from the broth, and placed culture-side down on the surface of a sterile slant of Sabouraud's agar. The slants are observed for growth after 3 weeks at room temperature. An effective fungicide should kill the test organism within 5 minutes.

Perhaps the most valuable contribution is the correlation of this laboratory method with practical applications. Clinical tests on 60 patients suffering from athlete's foot showed that those preparations which killed the test organisms in 5 minutes were clinically effective for treating the disease, while a preparation which failed to kill the organism in 30 minutes was ineffective clinically.

In a slight modification of the Burlingame-Reddish method, culture from the toes of a patient was streaked over the surface of Sabouraud's medium in place of using stock test organisms.[4] By this method, a proprietary solution, Whitfield's lotion, and a 1 per cent solution of sodium hypochlorite were found effective in killing the fungi, but a 15 per cent sodium thiosulfate solution was not. To obtain a natural culture from scrapings from the toes of a patient, a slightly modified agar medium is recommended containing 4 per cent of dextrose, 1 per cent of Fairchild's peptone, 2 per cent of agar, and 0.0002 (1:500,000) of gentian violet, at a pH of 5.8.[11] The gentian violet inhibits the growth of the usual bacterial flora of the skin without hindering the growth of pathogenic fungi. Otherwise material loaded with mycelia and spores may not yield a growth of fungi on the planted medium owing to an overgrowth of bacteria. Perhaps regular laboratory procedure should be simplified by use of a single pure test organism.

This fungicidal method being designed for testing liquids, it would appear to be particularly applicable when such liquids were to be used as lotions or in individual foot baths. No doubt the fungicidal liquid used in a public footbath should kill the fungi on very brief exposure, as the purpose and the conditions there are quite different. Investigators studying public foot baths and using an inoculum of *T. rosaceum* in normal saline solution exposed this to fungicidal agents for 10, 20, 30 and 60 seconds.[7] A solution of sodium hypochlorite containing 0.11 per cent of available chlorine inhibited growth on 20 seconds' exposure; 1:1000 dilutions of mercuric chloride, copper sulfate, zinc chloride, and ammonium alum were non-fungicidal under the test conditions. A 5 per cent solution of formaldehyde inhibited growth on 20 seconds' exposure.

In order to test materials which are intended to be fungistatic or to have growth-inhibiting powers, agar-plate and agar-cup methods are useful.[10] A medium made from 2 cc. of sterile horse serum and 18 cc. of Sabouraud's agar is streaked with the test fungus. Ointments and salves to be tested are melted and streaked on the surface of the inoculated agar with a glass rod; powders are applied to a small portion of the plate with a spatula. The plates are incubated at room temperature for 5 days. If the material under test is fungistatic, a clear zone appears in the medium around the area where it was applied. In the agar cup-plate method a circular depression is made in the serum agar during or after hardening. After inoculation with the test organism 0.5 cc. of test liquid or jelly is placed in the cup, followed by incubation at room temperature for 5 days. A clear zone around the cup shows penetration and fungistatic activity.

In a modification of the agar-plate method, ointments and powders were applied to one-centimeter sterile squares of fabric cut from the soles of white socks[12]. The treated fabric squares were placed in contact with the surface of the agar culture for various periods of time. In order to test liquid preparations, the fabric squares were immersed for 1 minute, excess liquid removed by blotting with sterile filter paper, and the cloth squares applied to the surface of the agar. Incubation was at 25° C. for 5 days or until good growth was observed on control plates. Zones of clear agar at least 5 mm. in width with a contact period of 1-3 hours were considered indicative of fungistatic properties.

Many factors have to be considered in the development of a standard method for fungicides. Probably most important is the simulation as nearly as possible of the conditions of use in practice. Best procedure would be to test a new product both in the laboratory and in the clinic, so that confidence in the efficacy of the product is justified. Laboratory experiments help to predict what concentration will be efficient, while clinical tests are needed to insure that such a concentration works in practice and is not a skin irritant under the conditions of use. Laboratory results may be helpful or may be misleading, depending on how they are obtained. The real criterion of efficacy is whether the product gives positive and satisfactory results when applied by bearers of the disease.

Warnings: A person having athlete's foot requires a good bit of education if he is to obtain the desired cure. If he tries one product and fails to get results, he is much more apt to blame the product than any carelessness or shortcoming on his part. One mistake people make is to treat the feet without paying any attention to the socks and shoes being worn at the time. Socks can be boiled, or can be soaked in a fungicidal liquid to free them of the infection. Shoes are often dusted in the toes and heels with a fungicidal powder, or more effectively may be sprayed with a strong fungicidal liquid, provided the liquid is given sufficient time to evaporate completely before the shoes are worn again. Many people have re-infected themselves by putting on infected shoes

(*Turn to Page* 109)

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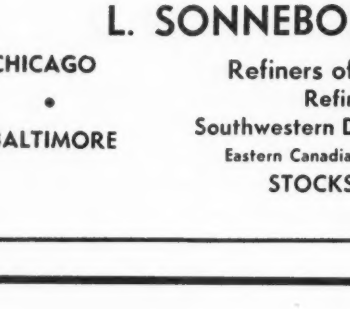

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BIOASSAY OF LIVESTOCK SPRAY

USING HYPNOTIC DOSES APPLIED IN A SPRAY TUNNEL

Craig Eagleson

U. S. Department of Agriculture,
Bureau of Entomology and Plant Quarantine

THERE is no generally adopted method for assaying the toxicity of livestock sprays. The fumigatory conditions of the Peet-Grady method for household sprays make it unsatisfactory for evaluating sprays to be used in well-aired barns and sheds. At the Dallas, Tex., laboratory of the Bureau of Entomology and Plant Quarantine methods have been developed for testing livestock sprays by which the conditions encountered in open barns are simulated.[3] It has been found by laboratory tests that flies recover more readily from pyrethrum poisoning when they are fanned by gentle currents of air than when conditions permit even mild fumigation, as in solid-bottom recovery cages.

For several years workers at this laboratory have studied the recovery of houseflies from poisoning by insecticides applied in doses regulated to produce typical symptoms in all the insects and yet to allow practically complete recovery. Such a dose is designated as the "hypnotic dose." The observations made during the recovery period reveal the rapidity and extent of initial knockdown, or torpor, the duration of the effects, and the rate of recovery from sublethal doses of a toxicant. The potency of different materials can be compared over a wide range of concentrations. With pyrethrum and aliphatic thiocyanates complete torpor is produced within one-quarter hour and nearly complete recovery occurs within 2 hours.

For the purpose of validating this technic, the dosage-torpor regression for the toxicity of pyrethrins to houseflies is compared with the dosage-mortality regression obtained with the same apparatus. A third regression obtained by the use of a modified Peet-Grady technic is also presented for comparison with it.

All methods used in this study depended upon the presumption that the data obtained in two experiments on different lots of flies could be compared on the basis of the effect of a standard or control insecticide. To make the data from all experiments numerically comparable, the mean percentage effect resulting from the application of the control spray in each experiment was adjusted to 50, and the percentages observed from other sprays were given a corresponding adjustment. The method of adjustment was that described by Ford[4], wherein the corrections are functions of the deviates of the normal curve of error.

The adjustable percentages of mortality and torpor were transformed to probits and then plotted against the logarithm of millimolar concentration. As the points in every case indicated rectilinear regressions, straight lines were fitted to the data by the method of least squares.

The curves for the 1:1 sex ratios were not calculated from the observed mean mortality or torpor of males and females, but from the mean of the expected values determined from the regression curves for the two sexes. The hypothetical 1:1 sex ratio regressions for dosage-mortality and dosage-torpor are given in figure 1 together with corresponding dosage-mortality curves published by Miller and Simanton[6], and by Murray.[7]

Materials

The test insects were houseflies (*Musca domestica L.*), reared on crimped oats, graded as to size in the pupal stadium, and aged 5 to 7 days as adults before use.

The insecticide was a dilution of a standard solution of pure-pyrethrum extract. The 20-to-1 concentrate was first diluted, on the basis of the manufacturer's assay, to 10.0-millimolar solution and again to 3.0-millimolar solution just before use.* The diluent was a water-white kerosene, not especially refined for fly-spray manufacture.

The laboratory was maintained at 30° C. and 50 per cent relative humidity throughout all experiments.

Peet-Grady Method

Of the three methods of bioassay, the modified Peet-Grady technic will be considered first. The chamber was a replica of the standard Peet-Grady chamber, but 1 cubic meter in size. The requirements of the official method of testing fly sprays adopted by the National Association of Insecticide and Disinfectant Manufacturers[8] were rigidly adhered to except as noted. Approximately 200 flies were used in each experiment.

*The designation of the pyrethrum solutions in terms of millimolar strength is based on the equivalent mean molecular weight ($\overline{M.W.}$) of pyrethrins I and II in the sample.

$$\overline{M.W.} = \frac{330.2\ (\text{pyr. I}) + 374.2\ (\text{pyr. II})}{(\text{pyr. I}) + (\text{pyr. II})}$$

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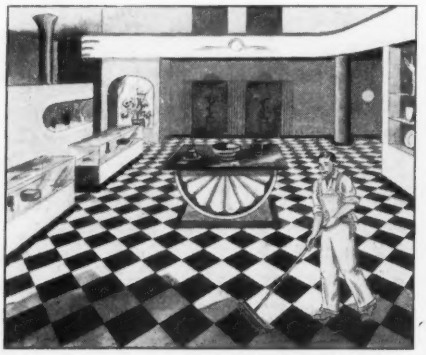

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Following the 10-minute period of fumigation in the chamber the flies were collected by means of a suction hose and deposited in recovery cages (30 by 40 by 10 cm.) having screen tops and bottoms, where they were provided with sugar cubes and water. The recovery cages were placed in a cabinet in which a constant current of air at approximately 17 meters per minute fanned the insects. At the end of the recovery period the dead flies were removed from the cages and the rest killed. All flies were then counted and the sex determined. It was the practice to count moribund flies as dead; only flies able to walk were considered alive.

It was found necessary to use 6 cc. of either the 3.0-millimolar pyrethrin solution or the Official Test Insecticide to produce median mortality, approximately three times the quantity called for by the official method, in proportion to the size of the chamber. This increase may have been due to the change in ratio between wall surface and volume in the small chamber, and perhaps in part to the use of flies showing higher resistance to pyrethrins than the flies used when the median lethal dose for the official method was established. The ventilation of the flies during the recovery period may also have been a contributing cause. Other laboratories have reported the same difficulty with the Official Test Insecticide in standard 6-foot chambers.

The following dosage-mortality regression equations were obtained in the modified Peet-Grady chamber:

For males:

$$Y = 5.424 + 2.521\ (X - 0.216) \pm 3.182\ \sqrt{0.00057 + 0.00114\ (X - 0.216)^2}$$

For females:

$$Y = 4.210 + 1.681\ (X - 0.216) \pm 3.182\ \sqrt{0.00041 + 0.00378\ (X - 0.216)^2}$$

Hypothetical regression for a population of 1:1 sex ratio:

$$Y = 4.804 + 1.827\ (X - 0.216) \pm 3.182\ \sqrt{0.00036 + 0.00339\ (X - 0.216)^2}$$

where Y = probit for the expected percentage mortality, and
X = logarithm of millimolar concentration of pyrethrins within the range 1.0 to 4.0 millimoles per liter.

In a recent article Bliss[2] reviewed the dosage-mortality curves for houseflies calculated from data of three authors. The slopes of these curves and those obtained by the writer are given in table 1 and illustrated in figure 1 at the bottom of the page.

Table 1.—Slopes of dosage-mortality curves for pyrethrins sprayed on houseflies by the Peet-Grady method

Author	*Slopes for Males*	*Females*	*Both sexes (1:1)*
Murray (6)	3.26	4.42	2.40
Miller and Simanton (5)	3.22	3.62	2.52
Hoyer et al. (4)	—	—	2.24
Eagelson	2.52	1.68	1.83

Figure 1—Dosage-effect curves for housefly populations of 1:1 sex ratio, treated with pyrethrum spray by different methods. The scale of log-doses has been shifted horizontally for each curve to avoid overlapping.

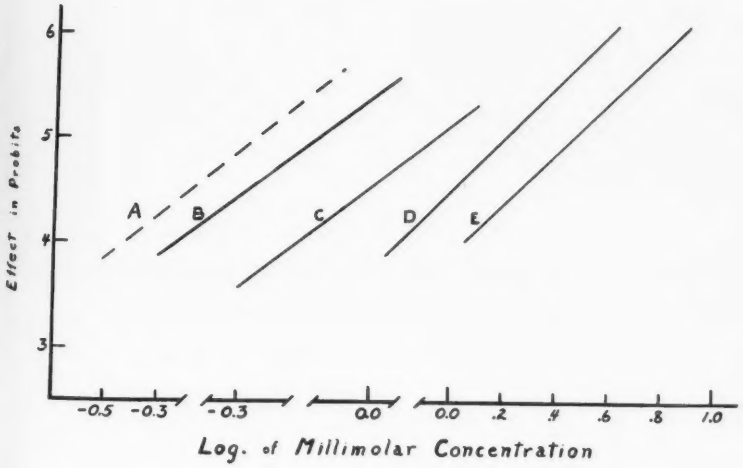
A—Dosage-torpor curve from hypnotic dose applied in spray tunnel.

B—Dosage-mortality curve obtained with modified Peet-Grady chamber.

C—Dosage-mortality curve obtained with spray tunnel.

D—Dosage-mortality curve obtained with Peet-Grady chamber —Murray's data.

E—Dosage-mortality curve obtained with Peet-Grady chamber —Miller and Simanton's data.



The lower slopes obtained at this laboratory may have been due to the ventilation of the flies during the recovery period and to the use of less highly refined carrier oil.

Dosage-Mortality by Spray-Tunnel Method

The second method of bioassay involved the application of spray in an aerated spray tunnel[3]. Approximately 50 insects were caged in each of several 9 by 17 cm. screen cylinders, which were usually sprayed in 6- or 9-replicate groups. The cylinders were inserted and revolved in an oval tunnel through which a uniform, controlled stream of air was drawn. The spray fluid was pipetted into a gravity-feed atomizer designed to provide uniform coverage of the cylinders. After the spray was discharged, the cylinders were removed and placed in the recovery cabinet. When the flies were torpid they were removed to recovery cages, provided with sugar cubes and water, and placed in the aerated cabinet. After

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6 hours the number dead and the sex ratio were determined.

The median lethal dose was 1.0 cc. of the standard 3.0-millimolar pyrethrin solution.

The equations for the dosage-mortality curves obtained by this technic for the range of pyrethrin concentration between 1.0 and 4.0 millimoles per liter are as follows:

For males:

$$Y = 5.076 + 2.368\ (X - 0.216) \pm 3.183\ \sqrt{0.0131 + 0.1214\ (X - 0.2158)^2}$$

For females:

$$Y = 4.047 + 1.933\ (X - 0.216) \pm 3.183\ \sqrt{0.00533 + 0.0513\ (X - 0.2158)^2}$$

Hypothetical regression for a population of 1:1 sex ratio:

$$Y = 4.593 + 1.950\ (X - 0.216) \pm 3.183\ \sqrt{0.000113 + 0.00105\ (X - 0.2158)^2}$$

The fact that male houseflies are much more susceptible to pyrethrin poisoning than are females constitutes a serious restriction on the use of the customary median lethal dose and shows the importance of determining the sex ratio in a sample of flies. But the labor of determining the sex of all insects used is enormous and should be avoided. A resume of data showing the difference in susceptibility of the sexes is given in table 2.

The spray-tunnel technic is considerably more rapid than the Peet-Grady method. In the spray tunnel 50 replications (about 50 flies in each) can be made in 15 minutes, whereas one replication (200 flies) in a Peet-Grady chamber requires 20 minutes.

Hypnotic Dose Method

To overcome the difficulty due to the unequal susceptibility of males and females to the median lethal dose, a new dosing technic was employed, namely, administering the material under test in hypnotic doses. The numbers of flies torpid at intervals during the recovery period are recorded. Since practically all the flies recover from this dose, its toxic effect on all the individuals in the sample can be observed with reasonable precision. On the other hand, only the more resistant half of the sample, which consists principally of females, recovers from a median lethal dose.

To provide a mild dose it was necessary to dilute the spray to approximately 1 millimole of pyrethrins per liter with the carrier oil. The hypnotic dose used in these experiments was 1.0 cc.

Approximately 50 flies were placed in each cylinder and sprayed in the tunnel. The cylinder was then set on a hardware-cloth shelf in the recovery cabinet. No food or water was provided, as there was rarely any mortality in the unsprayed check cylinders during the observation period. Tallies were made of the flies torpid ¼, ½, 1, and 2 hours after being sprayed. The flies were finally killed and counted.

It was unnecessary to determine the sex ratio of more than a small fraction of the sample, for even extreme variation created only a negligible discrepancy in mean torpor. The difference in susceptibility of the sexes (mean torpor) was found to be only 5.8 ± 1.8 per cent (significance of the difference: $t = 3.2$, $P < .01$). A sample in which 75 per cent of the flies were males would cause less than 2 per cent greater mean torpor, whereas with a median lethal dose it would show 11 per cent greater mean mortality than if the sexes were equal (Miller's and Simanton's data[6].)

The more even response of the sexes to the hypnotic dose was apparently not due to the lowered concentration of pyrethrins. During the determination of the dosage-mortality curve reported above, 1.0-millimolar sprays produced 32 per cent greater mortality among males than among females. It appeared that the essential thing was the use of a dose that produced all the symptoms of poisoning without being fatal to the males of low resistance.

A considerable statistical advantage was gained by the use of the hypnotic dose. Several observations were made on a single sample following a single application of insecticide. Observations were also made of the different physiological stages in the reaction of the insects to the poison. This information, stated as rate of recovery or slope of the recovery regression, provides a better insight into the action of various insecticide mixtures than is possible by the official Peet-Grady method. Were it not for the ability of flies to recover from pyrethrin or aliphatic thiocyanate paresis, present insecticides would be much more valuable aids in combating the fly menace.

With the use of hypnotic doses, a dosage-torpor curve was established for pyrethrins in the concentration range of 0.25 to 2.0 millimoles per liter. The equation for the regression, calculated by the method of Bliss[1], is as follows:

$$Y = 4.843 + 2.032\ (X + 0.0174) \pm 3.182\ \sqrt{0.00027 + 0.00439\ (X - 0.0174)^2}$$

The slope of this curve is less than that of the curves for flies of 1:1 sex ratio reviewed by Bliss. It is almost the same as that of the dosage-mortality curve obtained at this laboratory with the modified Peet-Grady technic, and not significantly different from the slope of the dosage-mortality curve obtained from applications of median lethal doses

Table 2.—Differences in susceptibility of male and female houseflies to pyrethrins

Source of data	Mortality from 2-millimolar solution			Mortality from 3-millimolar solution		
	Males	Females	Difference	Males	Females	Difference
	%	%	%	%	%	%
Murray (7)[1]	63.4	7.7	55.7	81.8	14.0	67.8
Miller and Simanton (6)[1]..	58.3	13.5	44.8	81.0	25.0	56.0
Eagelson[2]:						
Peet-Grady method	71.3	24.7	46.6	86.5	37.7	48.8
Spray-tunnel method ...	62.1	21.1	41.0	80.5	32.4	48.1

[1]The actual concentrations used were 2.3 and 3.4 millimoles per liter.
[2]The concentrations used were 2.0 and 3.0 millimoles per liter. Adjusted data from five experiments.

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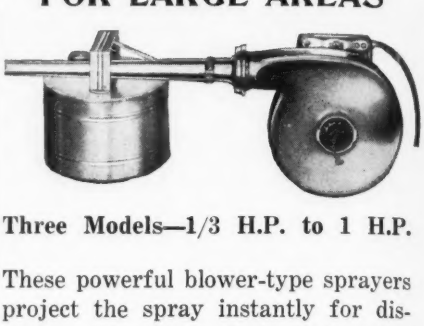

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in the spray tunnel. Bliss's curves, however, were drawn from experiments in which the recovering flies were not ventilated, as they were in this laboratory.

It seems probable that recovery from a hypnotic dose of pyrethrins represents the same toxicological process as recovery from a median lethal dose. There appears to be no difference between the dosage-mortality and dosage-torpor relationships.

Several advantages in the use of hypnotic doses will be recognized. Owing to the short period of observation, the mortality due to causes other than the treatment, as indicated by unsprayed check flies, is almost nil, and need not be considered as affecting results. The observations and final counts are made without removing the flies from the spray cylinders. It is unnecessary to determine the sex ratio of more than a small sample of the flies used, for fluctuations in ratio do not materially affect the results. The ease and rapidity with which numerous replications of a dose can be made foster statistical precision among the data. Since the ability of flies to recover from mild doses of fly sprays is a factor limiting the spray's efficacy, the study of that recovery is important and is facilitated by the methods described.

Summary

A new method of making bioassays of pyrethrum livestock sprays is described and compared with previously used methods.

Houseflies were treated with pyrethrum sprays in a modified Peet-Grady chamber, in an aerated spray tunnel, using a median lethal dose, and in an aerated spray tunnel, using a hypnotic dose. The flies were placed for observation in a recovery cabinet through which a constant stream of air was circulated. Dosage-mortality and dosage-torpor curves obtained by the three methods are given and compared with those published by other workers.

It is concluded that the use of hypnotic doses applied to houseflies in an aerated spray tunnel, with observations of torpor made during their recovery in an aerated recovery cabinet, is an advantageous and satisfactory method of assaying livestock fly sprays.

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Antiseptic for Textiles

One of the interesting newer developments in the textile industry is the rendering of fabrics antiseptic. Of numerous compounds examined for the purpose, the sodium salt of dihydroxy-hexachloro diphenyl methane is nearest the ideal product. Disadvantages are that it is not soluble in acid solution and is not resistant to dry cleaning and washing. However, it is a very powerful antiseptic and bactericide, killing *Staphylococcus aureus* in a dilution of 1:8000 in 5 minutes at 37°C., compared with phenol which kills in a dilution of 1:90 under the same conditions. It has been established by animal experiments that the compound is of low toxicity and will not cause skin irritation in the small amounts required. Robert A. Engel and Wm. Gump. *Am. Dyestuff Reporter* **30,** 163-5 (1941).

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Disinfecting Aluminum Equip.

Neo-moscan, a disinfectant used for sterilizing dairy apparatus, is a mixture of soda ash, sodium silicate and sodium hypochlorite. Microformin, used particularly for sterilizing aluminum apparatus in the fermentation industry, and for the disinfection of hands, is a neutral, stabilized formaldehyde, used hot at 80-90° as a 1 per cent solution. The loss in weight of aluminum in it is less than 0.1 gram per square meter even after 20 days. Formaldehyde in a 20 per cent solution causes a loss of 1 gram per square meter in 40 hours.

Activin effects a loss of aluminum of less than 0.5 gram per square meter per day at 50-60°. The original "lightning extract" containing a mixture of alkali silicate-chloride-sulfite, dissolves milk scale and is used for the disinfection of milk containers, particularly in the foot and mouth disease of cattle. Loss of aluminum is less than 0.5 gram per square meter.

P3-sterile, harmless to aluminum, is essentially a phosphate-silicate mixture with a chlorine preparation as disinfectant.

"Zephyrol 345," for sterilizing surgical instruments, is a high-molecular alkyldimethyl benzyl ammonium chloride. Sagrotan, indifferent to aluminum, is a combination of vegetable oils dissolved by saponification, and *para*-chloro-*meta*-cresol with *sym*-chloroxylenol; it is strongly germicidal. H. Wolf. Aluminium **22,** 270-2 (1940); through *Chem. Abs.*

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Mothproof Tests

Accelerated laboratory tests have been devised to predict in a matter of weeks the mothproofing potentialities of a particular chemical, but no general agreement on a standard test method has been reached and the term "mothproof" does not stand for a definite measurable value.

The black carpet beetle is well adapted for testing mothproofness. Adults emerge chiefly in March, April, May and June. Ability to withstand starvation and toxic foods is directly correlated with the size of the larvae. They prefer to feed between two surfaces rather than on the exposed upper side. Dead larvae and pupae are frequently eaten. The

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test where the larvae are confined to the test sample with no other choice of food is the most important one. Three sizes of larvae are recommended for each test. Ten mg. of excrement for 15 larvae for a period of six weeks, was set as the critical point below which a sample may be considered mothproof. Larvae react differently to various mothproofing agents. *Am. Dyestuff Reporter* **30,** P142-5 (1941).

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Issue Mothproof Report

A report covering new tentative mothproofing test procedures has been issued by F. W. Fletcher of the Dow Chemical Co., Midland, Mich., chairman of the Mothproofing Committee of the National Association of Insecticide & Disinfectant Manufacturers. This report issued April 17 to members of the committee and other cooperating agencies covers a method for determining resistance of fabrics to moth attack, the value of various compounds as protective media, and a procedure for rearing and using moths in the tests. This work is being conducted in conjunction with the American Society for Testing Materials and the American Association of Textile Chemists and Colorists.

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Review Anabasine Properties

"A Review of Information on Anabasine," by R. C. Roark, division of insecticide investigations of the U. S. Department of Agriculture, has just been published by the department as bulletin E-537. The properties of anabasine and its chemistry are covered in the first few pages of the 56-page monograph while the remainder of the book is devoted to summarizing all the work that has been done using anabasine as an insecticide since its discovery in 1929. In his summary, the author says: "In general, the published reports indicate the following:

"Anabasine closely resembles nicotine in its physical, chemical and insecticidal properties, but there are some important differences. Anabasine is less volatile than nicotine and, as might be expected, is less effective as a fumigant. As a contact insecticide, anabasine is equal to or even superior to nicotine, especially against aphids. Some experimenters have reported that anabasine is five times as toxic as nicotine when sprayed on the bean aphid (*Aphis rumicis.*) As a stomach poison to insects, anabasine appears distinctly inferior to nicotine in tests upon the larvae of the oriental fruit moth, red-legged grasshopper, Mexican bean beetle, Japanese beetle, honeybee and the silkworm. Anabasine appears valueless against the eggs of insects. It would seem, therefore, that anabasine is a valuable contact insecticide, especially for use against aphids, but that little can be expected from it as a fumigant, an ovicide or a stomach poison."

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Athlete's Foot

(*from Page* 99)

that had been laid aside for some time. Simple instructions on the label or in pamphlet form should enable the user of a product to avoid the pitfalls described and so give the product a fair break.

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Rotenone for Snowfleas

Snowfleas, order Collembola, were found infesting the cork insulation of an apartment refrigeration plant. A 5 per cent solution of rotenone in methyl formate injected at 6-foot intervals into the 5-inch layer of cork insulation gave complete control. G. E. Sanders *Pests* 8, No. 12, 20.

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Agent for Scale Insects

The residue of pyrethrum powder after extraction of pyrethrin is treated with aqueous caustic soda solution to form an insecticide for scale insects. M. Kurizaki. Japanese Patent No. 130,187; through Chem. Abs.

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Insecticide and Disinfectant

An extract containing mainly pyrethrin and perillaldehyde, obtained by extraction of pyrethrum and *Perilla mankinensis* powder with a petroleum oil fraction, is added to wintergreen oil containing rotenone. Pine oil, Japanese pepper oil and peppermint oil are added. H. Kimura. Japanese Patent No. 129,940; through Chem. Abs.

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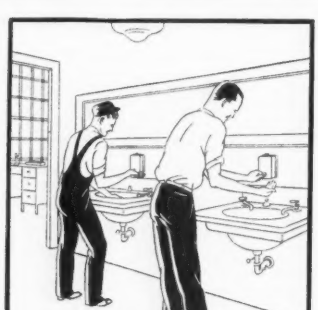
Sanitary Products on the Poultry Farm

(*from Page* 93)

materials which will attract parasites, such as used litter, droppings, etc.

The control of rats is usually of the greatest importance as the abundance of feed in poultry runs invariably attracts rodents. In choosing a rat poison, the poultryman must consider first the danger of poisoning the fowls. Unless precautions are carefully observed the use of arsenicals, thallium, barium, phosphorus paste and other poisonous preparations may be dangerous. Red squill is not harmful to adult chickens and since chicks show a distinct dislike for squill and it is not highly toxic to them, it may be used with greater safety as a rat poison in places accessible to chicks. However, poultrymen find wide and safe use for phosphorus and other poisons by setting out baits in areas near but outside the runs.



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NEWS...

A. S. Boyle Buys Cardinal

A. S. Boyle Co., Chicago, manufacturer of insecticides and polishes, has purchased the business of Cardinal Laboratories, Inc., formerly at 1743 West 74th St., that city. The Boyle Company is a subsidiary of American Home Products Corp., which has four other plants in Chicago for manufacture of household specialties and medicines.

Insecticides at Drug Meeting

"What a pharmacist should know about insecticides" was included among the topics discussed at a conference of Illinois pharmacists, sponsored by the University of Illinois College of Pharmacy in Chicago, April 15 to 17. Dr. E. H. Wirth, assistant professor of pharmacognosy, lectured on the "Nature and Use of Insecticides" and in the non-commercial exhibits arranged for the visitors from all over the state were several displays of new scientific developments in the insecticide field.

Parke, Davis in 75th Year

This year, Parke, Davis & Co., Detroit, are celebrating their seventy-fifth anniversary. Founded as Duffield, Parke & Co., in October, 1866, the company name Parke, Davis & Co. was adopted in 1871. Prior to 1866, Dr. Samuel P. Duffield, one of the founders, had begun the manufacture of drugs in Detroit.

M. M. Marcuse Injured

M. M. Marcuse, president of the West Disinfecting Co., Long Island City, N. Y., and a former president of the National Association of Insecticide & Disinfectant Manufacturers, was severely injured in an automobile accident at Santa Barbara, Calif. on March 30 last. Mrs. Marcuse and relatives who accompanied Mr. Marcuse at the time of the accident were also badly injured. Mrs. Marcuse will be confined to

M. M. MARCUSE

the Santa Barbara Cottage Hospital for two months at least, according to reports. Mr. Marcuse has been discharged from the hospital and is recuperating.

Lehn & Fink Earnings Down

Net income of Lehn & Fink, Inc., Bloomfield, N. J., for the nine months ended March 31, 1941, was $501,956, equal to $1.25 a common share. For the like period ended March 31, 1940, earnings were $517,161, or $1.29 a share.

Issue Floor Finish Booklet

"Floor Finishes" is the title of a 22-page bulletin issued by Michigan State College, East Lansing, Mich., which contains much valuable sales promotion "ammunition" for manufacturers of floor finishing materials. After discussing "drawbacks" of wax, oil, varnish, paint and enamel, the author recommends use of the new penetrating floor seals recently developed. These, he admits, have been considered primarily as commercial finishes, for schools, office buildings and factories. Not being advertised for home use, he says, the demand has not been great enough to induce many dealers to stock them. If not available locally, he points out that they can be obtained from the various manufacturers. Following application of the floor seal, the bulletin advises the addition of a coat of wax. Directions are given for treating floors of wood, linoleum, concrete, asphalt, rubber, and tile.

Prentiss Moves Offices

R. J. Prentiss & Co., New York, is now occupying new offices at 80 John St. Offices were formerly at 100 Gold St. The new location provides the company with substantially more office space.

Pacific Insecticide Men Meet

A semi-annual meeting of the Pacific Insecticide Institute was held on April 23 at the Hotel Clark, Los Angeles. The program of the day included discussions of pest control problems affecting the grower, governmental research agencies and the insecticide industry and a study of legislative activities pertaining to the industry. Among the speakers were P. J. Ronan, of American Cyanamid & Chemical Corp., E. T. Doyle, of Tobacco By-Products & Chemical Corp., Louisville, John Paul Jones, of San Francisco Sulphur Co., and Esler Johnson, of John Powell & Co.

Stops Knox-All Claims

W. C. Stewart, trading as Knox-All Co., Freeport, Ill., recently entered into an agreement with the Federal Trade Commission to desist from advertising that "K-A Poultry Spray" prevents or eliminates cold, roup or other poultry diseases; keeps the flock or the poultry house free from mites or bluebugs; penetrates to all parts of the poultry house; aids in killing germs before they attack the birds, and is endorsed by leading hatcheries. Mr. Stewart has also stipulated that he will cease representing that "K-A Fur Farm Fluid" destroys vermin which infest animals; is effective

against fleas, lice or ticks on fur-bearing animals, and effectively combats termites.

Schroeder MGK Sales Mgr.

C. L. Schroeder, vice-president of McLaughlin, Gormley King Co., Minneapolis, was recently appointed general sales manager of the

C. L. SCHROEDER

company. Mr. Schroeder has been in charge of the sales of the food products division of the company for the past four years. He will now also have charge of sales of the company's insecticide division.

F.T.C. Hits Germicide Claims

Bard-Parker Co. and its subsidiary and selling agent, Parker, White & Heyl, Inc., both of Danbury, Conn., were recently charged in a Federal Trade Commission complaint, with misleading representation in the sale of "Bard-Parker Formaldehyde Germicide." The companies, it was charged, had represented incorrectly that the product is an efficient sterilization medium for surgical and dental instruments and a safe substitute for heat sterilization. In answering the complaint, Bard-Parker Co. and its subsidiary denied that they have engaged in the practices set forth by the F.T.C. Hearing will be held.

Varley Recuperating in Ariz.

James Varley, of Baird & McGuire, Inc., St. Louis, is in Arizona recuperating from an attack of asthma.

N.P.C.A. To Meet Oct. 27-29

The ninth annual convention of the National Pest Control Association will be held October 27-28-29 at the St. Francis Hotel in San Francisco. Emphasis at the meeting will be placed on the national defense and the part that the Association will play in the defense program. It is expected that Lee A. Strong and other representatives of the Bureau of Entomology and Plant Quarantine, Washington, D. C., will be among the speakers. Other speakers are to be Professor William B. Herms and Dr. G. F. MacLeod of the University of California.

Convention committee chairmen are as follows: national committee, F. E. Bohman; San Francisco general committee, C. J. Menard; exhibits and advertising, V. H. Montgomery; publicity, H. L. Davies; entertainment, George A. Rader; attendance and registration, E. A. Roberts; reception, R. E. Hackley; travel and transportation, Martin Meyer; sergeant at arms, Arnold Alderman; ladies committee, Mrs. V. H. Montgomery.

Correction

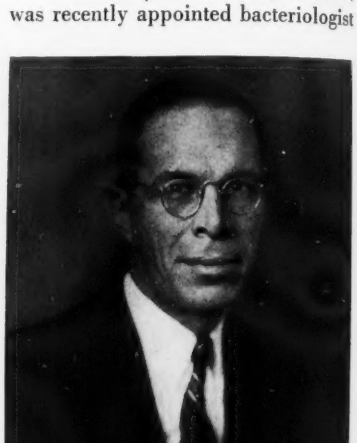
In the article on "Insecticidal Dusts" in April *Soap,* the first sentence under the heading, Methods of Procedure, on page 101 should begin "Each dust was mixed in 25 gram samples . . .", instead of "Each dust was mixed in .25 gram samples . . ."

Offer New Synthetic Insecticide

Two new insecticides consisting solely of hydrocarbon of petroleum origin have just been brought out by Velsicol Corp., Chicago, manufacturer of specialty petroleum products. According to the manufacturer, the new insecticides, known as "AR-50" and "AR-60," used either alone or in conjunction with other insecticidal materials, possess high toxicity toward houseflies and other insect pests and appear to be non-toxic to warm-blooded animals. When tested in the Peet-Grady chamber, kill values ranging between 90 and 100 per cent are obtained, it is said. "AR-50," the more volatile type, is recommended by the manufacturer for indoor pest control, while "AR-60" is recommended for cattle sprays.

Appoint Brewer Bacteriologist

Charles M. Brewer, of the U. S. Department of Agriculture, was recently appointed bacteriologist



CHARLES M. BREWER

of the Insecticide division of the Agricultural Marketing Service, D. A., to fill the vacancy resulting from the death of G. L. A. Ruehle. Dr. Brewer entered the department in 1925 as assistant in the bacteriological laboratory of the Insecticide and Fungicide Board and continued in this work after the board was abolished and the enforcement of the Insecticide Act placed under the Food & Drug Administration.

Hopkins Claims to Stop

J. L. Hopkins & Co., New York, recently entered into a stipulation with the Federal Trade Commission in which it was agreed to cease representing that its "Red-Rat-Squil" will kill rodents other than rats and mice and that it is the surest and most satisfactory way to destroy rats and mice. The company has also agreed to stop claiming that the product will check obnoxious odors, that tests of the product guarantee uniformity of toxic strength, and that baits mixed with the preparation and exposed to the air will not over a protracted period of time become rancid.

Insecticide-Disinfect. Assn. Meets Chicago, June 9-10

THE 27th annual mid-year meeting of the National Association of Insecticide & Disinfectant Manufacturers will be held on June 9 and 10 at the Edgewater Beach Hotel, Chicago. The meeting will comprise two days of business sessions preceded by a meeting of the Board of Governors and various committees on Sunday, June 8. The general convention committee is headed by N. J. Gothard of the Sinclair Refining Co., East Chicago, Ind. Some of the more important features of the program of speakers and discussions have been announced by R. P. Neptun of Allaire Woodward & Co., Peoria, Ill., chairman of the Program Committee.

On the program this year will be an "Information Please" hour to be conducted by Charles P. McCormick of McCormick & Co., Baltimore. This will comprise the submission of questions to a committee of experts who will give their answers in open meeting following which there will be discussion of the subjects involved. Questions to be discussed will cover all phases of labeling, marketing, technical points, manufacture, etc., in connection with insecticides, disinfectants, and other sanitary specialties. Speakers thus far scheduled include C. O. Auslander, purchasing agent of the Michael Reese Hospital, Chicago, on "Hospital Sanitation"; Dr. E. M. Searls of the University of Wisconsin on "Effectiveness of Cattle Sprays"; Dr. Alfred Weed of John Powell & Co. on "Deterioration of Pyrethrum Powders." Insecticide and disinfectant legislation, including a discussion of a proposed model state insecticide law, will be taken up by H. C. Fuller, Washington technical expert, and J. M. George, secretary of the Eastern States Manufacturers Association. A report on mothproofing procedure will be made by F. W. Fletcher of the Dow Chemical Co. A. E. Badertscher of McCormick & Co. will report on the work of the insecticide scientific committees of the Association for the past six months. Frank Nelson of Stanco, Inc. will report on investigations into test methods for cattle sprays. Specification developments will be discussed by G. M. Baird of Baird & McGuire, Inc.

The meeting will close on Tuesday evening, June 9, with a beefsteak dinner and floor show in the Michigan Room of the Edgewater Beach Hotel, preceded by a cocktail party. Group luncheons for those attending the meetings will be served each day. Registration will be in charge of D. W. Lynch of John Powell & Co.

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A. I. & F. A. Prepares Program

Plans for a general program for the coming year were discussed at the first open convention of the Agricultural Insecticide & Fungicide Association held recently at the Biltmore Hotel, New York, which was attended by one of the largest groups the association has ever gathered together. Representatives of approximately 100 firms outside the association were invited and in addition about sixty members were present. Open discussions at the two day meeting covered such subjects as Federal and State legislation, Government relations, standardization of containers, statistics on insecticide materials, distributor reporting, legal information, bulletin service and a program of standard colors for insecticides and fungicides. Plans discussed for the year 1941 included consideration of the National Defense, technical and field service, distribution, deliveries, inventories, publicity, and commodity groups within the association. Committee members, whose names have not yet been announced by association headquarters, are at present preparing a complete program for the coming year. The association, in the future, will hold two conventions every year, it is said.

NEW ENTOMOLOGICAL LABORATORY

A picture story showing equipment and methods used in the new entomological laboratory of Sinclair Refining Co. at East Chicago, Ind., is scheduled for an early issue. Described as the most modern and best equipped laboratory of its type, the story will interest everyone concerned with insecticide testing.

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Entomologists to Meet June 25

The American Association of Economic Entomologists will meet at Durham, N. H., June 25 and 26, to hold a symposium on laboratory procedures in studies of the chemical control of insects. Prominent entomologists who will participate include Dr. F. L. Campbell, Dr. H. H. Shepard, W. C. O'Kane, H. A. Waters, Dr. Roy Hansberry, Dr. C. H. Richardson, Dr. R. T. Cotton, Dr. E. L. Goodhue, Dr. V. G. Bethier, W. W. Sullivan, W. E. McCanley, and F. W. Fletcher.

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Introduces "Powd-A-Wax"

"Powd-A-Wax," a combination auto cleaner and wax, was recently put on the market by Hedall Laboratories, Pittsburgh. Sold in 4-pound and 25-pound cans, the product is said to produce a hard wax finish that is not streaked by rubbing.

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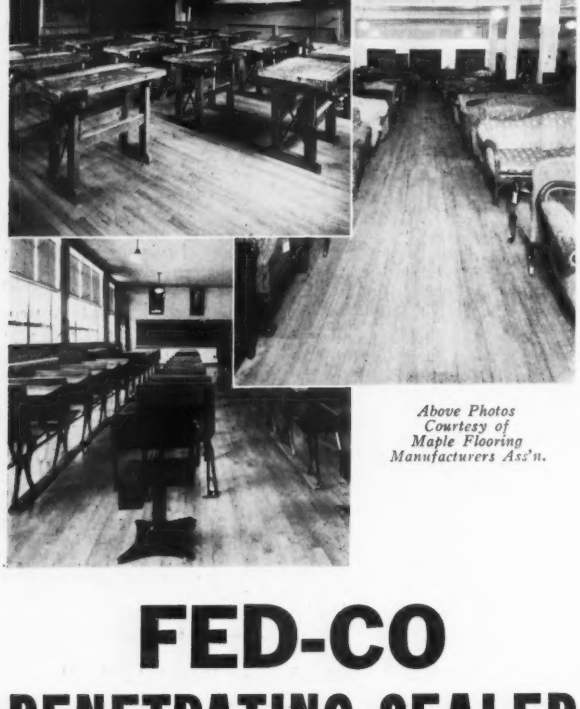
Hunzikers New B. & M. Agent

Baird & McGuire, Inc., St. Louis, recently appointed Hunzikers, Inc., Chicago, as distributor for their products in the Chicago area. Complete stocks of disinfectants, cleaners and solvents will be carried at the Chicago warehouse at 520 West Erie street.

FEDERAL

THE DEMAND IS FOR A HARD SURFACED FLOOR . . . WITHOUT A SURFACE FILM



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It fills the pores of the wood without building a surface coating—Makes the floor hard and resistant to wear—Makes a more handsome floor, easy to clean and economical to maintain.

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DEVELOPED ESPECIALLY FOR USE IN NO RUBBING WAXES

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EXTRA WHITE BONE DRY and all other grades of SHELLAC

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Sanitary Suppliers Elect Magee

TALKS on all types of sanitary supplies,—disinfectants, insecticides, detergents, rug shampoos and other maintenance supplies, and clinics on market outlooks, were features of the 19th annual convention of the National Sanitary Supply Association held April 21-22-23 at the Jefferson Hotel in St. Louis, and attended by well over a hundred leading manufacturers and distributors of sanitary supplies. It was described by many of those present as the best convention in the history of the association.

Marshall L. Magee, of T. F. Washburn Co., Chicago, was elected president of the association, replacing Louis Herzog, of Riddiford Brothers, Inc., who has held office for the past three years. A new president is to be elected every year, according to a new policy which calls for a manufacturer as president in alternate years. Other officers elected at the meeting are as follows: vice-president,—Frank Hoffman, of Hoffman Supply Co., Philadelphia; treasurer,—S. J. Bockstanz, of Bockstanz Bros. Co., Detroit; secretary,—E. C. Kratsch; directors,—Paul Manselle, of American Sponge & Chamois, New York; Walter Gast, of P. B. Gast & Sons, Grand Rapids, Mich.; C. H. Armiger, of Armiger Chemical Co., Chicago; J. Zucker, of State Chemical Supply Co., Cleveland; Louis Herzog; Tom Opie, of Opie Brush Co., Kansas City; and F. W. Kohler, of F. C. Cook Co., Denver.

Among the addresses presented at the three-day meeting were the following: "Wetting Agents and Synthetic Detergents," by Paul Logue, of Monsanto Chemical Co., St. Louis; "Disinfectants," by Jack Varley, of Baird & McGuire, Inc., St. Louis; "Office Building Maintenance," by J. W. McClintock, superintendent of the Pierce building, St. Louis; "Acid Cleaners," by B. C. Lindemann, of Skasol Corp., St. Louis; "Insecticides," by C. S. Corl, of Allaire, Woodward & Co., Peoria, Ill.; "Rug Shampoos," by P. B. Roberts, Superior Laboratories, St. Louis; and "The Story of Sponges," a motion

MARSHALL L. MAGEE

picture, presented by Jack Schroeder, of Schroeder & Tremayne, Inc., St. Louis.

In addition there were addresses by retiring president Louis Herzog, and E. A. Stanford, chairman of the arrangement committee, and reports by treasurer S. J. Bockstanz and secretary E. C. Kratsch, as well as market clinics devoted to studies of the immediate and long pull outlooks for all the various types of materials in the sanitary supply field.

Among exhibitors at the convention were: Procter & Gamble Co., Cincinnati, whose exhibit of oil soaps and liquid soaps was in charge of J. J. Hentz and R. G. Waner; White Mop Wringer Co., Fultonville, N. Y., showing mop pails and tanks, in charge of L. N. Vedder; Tu-Way Products Co., Detroit, with O. T. Schaefer displaying dust mops; Armour & Co., Chicago, whose display of a line of soaps was manned by T. M. Galvin and R. A. Winser; Palmer Products, Inc., Waukesha, Wis., soap dispensers, mops and applicators, in charge of J. F. Palmer; Fuld Brothers, Baltimore, complete line of sanitary chemicals, in charge of A. Lorch and M. Skaist; Continental Car-Na-Var Corp., Brazil, Ind., with a display of "Rex" waxing, scrubbing, polishing and carpet cleaning machines and portable cleaners in charge of J. H. Longshore; Peck's Products, St. Louis, showing soaps, shampoos and water wax, attended by Leo G. Peck; T. F. Washburn Co., Chicago, waxes and floor seals in charge of M. L. Magee.

City Janitor Supply & Brush Co., St. Louis, showed sanitary supplies, in charge of E. A. Stanford. Mr. Stanford was also in charge of the liquid wax, floor seal and floor cleaner display of Franklin Research Co., Philadelphia. Other exhibitors included: Davies-Young Soap Co., Dayton, with an exhibit of liquid wax, soap, wax remover, cleaners, in charge of E. G. Eckerman & J. M. Steverding; Baird & McGuire, St. Louis, showing disinfectants, insecticides, dishwashing compounds, in charge of Jack Varley and Jim Varley, Jr.; Frank C. Cook Co., Denver, who showed dance floor wax, cleaners and fillers, in charge of F. W. Kohler, and Moore Bros. Co., New York, liquid soap dispensers, in charge of M. J. Peters.

The annual banquet under the direction of Col. John T. Opie, as master of ceremonies, was held the evening of the second day of the convention.

Next year's meeting, it was tentatively decided, will be held in Philadelphia the middle of April.

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Exhibit at Safety Show

R. M. Hollingshead Corp., Camden, N. J., G. H. Packwood Mfg. Co., St. Louis, Sugar Beet Products Co., Saginaw, Mich., and West Disinfecting Co., Long Island City, were among the exhibitors at the 12th Annual Safety Convention and Exposition, presented at the Hotel Pennsylvania, New York, by the Greater New York Safety Council, April 22-25.

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Master Chemical Co. Moves

Master Chemical Co., sanitary supplies, Milwaukee, formerly at 1950 W. Fonddulac Ave., has just moved to 942 N. 5th St.

SOAP DIES and MOULDS

—for—
TOILET SOAPS
LAUNDRY SOAPS AND
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STAMPING

For Foot and Power Presses

Established 1894

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. . . and other insecticide specialties for the agricultural and household trades.

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. . . paints, polishes, cleaners, specialties for the janitor supply house. Let us send further information.

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HAMMOND
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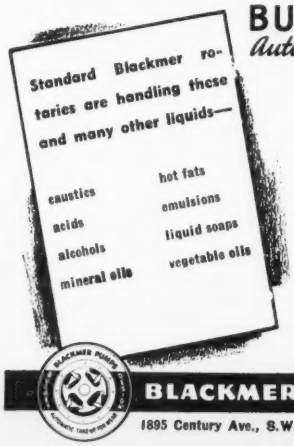
ESTABLISHED 1875

AS SURE AS 2+2=4

DRIVES: MOTOR
V-BELT OR FLAT BELT

BLACKMER ROTARY PUMPS Save You Money!



BUCKET DESIGN
Automatically takes up Wear

- Delivers more gallons per penny.
- Steady flow. No foaming or churning.
- Standard units handle most soap and chemical pumping jobs. Saves cost of "special pumps."
- Capacities from 10 to 700 GPM. Built in 3 constructions; standard, with liner or steam-jacketed.
- *20 to 25 years continuous service is not unusual for Blackmer pumps.*

Get Blackmer data before you buy pumps. Write for Bulletin UB-320.

BLACKMER PUMP COMPANY
1895 Century Ave., S.W. — Grand Rapids, Michigan

FOR EFFICIENT, ECONOMICAL MIXING
OF SWEEPING COMPOUNDS, DEODORANT CRYSTALS, INSECTICIDES Lower power consumption, rapid, through mixing, and long trouble-free service feature this Sprout-Waldron mixer. Brush sifter, to remove lumps and foreign material, is optional equipment. Capacities 2½ to 15 cu. ft. *Write for catalog.*

SPROUT, WALDRON & CO., INC.
132 SHERMAN ST. — MUNCY, PA.
MIXING, CONVEYING, POWER TRANSMISSION MACHINERY

Advises Cresylic Disinfectant

Criticizing the Government for buying U.S.P. Cresol Compound when there are so many factors in favor of the use of a cresylic disinfectant instead, Gordon W. Baird, president of Baird & McGuire, Inc., Holbrook, Mass., advises that various branches of the Government should be urged to switch their purchases to cresylic disinfectant. In a letter to *Soap & Sanitary Chemicals*, he states:

"I would like to bring to your attention the existing conditions in the disinfectant field regarding Cresol, U.S.P. As you know, Liquor Cresolis Saponatus, U.S.P. XI is manufactured from Cresol USP which article is extremely scarce at the present time. Major producers are considerably behind in their deliveries even at this early stage of our huge defense program. What is the situation going to be later on?

Various branches of our government are continuing to put out invitations on large quantities of Compound, U.S.P. The most recent invitation at this writing was opened on April 10. This called for an approximate quantity of 75,000 gallons of Cresol, U.S.P. Please keep in mind that this is gallons,—not pounds. I dare say that no party has, or can secure over a period of ninety days, this quantity of Cresol, U.S.P.

Several members of the National Association of Insecticide and Disinfectant Manufacturers have, at various times in the past, attempted to convince various purchasing divisions of our government of the advantages of cresylic disinfectant over the Cresol Compound, U.S.P. Per unit of disinfectant value, the cresylic disinfectant is a much less expensive disinfectant, and now with the scarcity of Cresol, U.S.P., I do not understand why with so many things in favor of the cresylic disinfectant they still insist upon placing invitations for the Cresol Compound, U.S.P.

Certainly there are stocks of cresylic acid in this country and a quicker delivery as well as a more certain delivery could be made to the government on cresylic disinfectant. I sincerely hope that the members of the disinfectant industry will do their part in conveying these thoughts to the various governmental purchasing agencies."

Moth-Proofing Claims Stopped

The Federal Trade Commission recently ordered David H. Goldman, trading as Zeen Chemical Co., Cleveland, to cease misleading claims in the sale of "Zeen Dry Cleaner."

"When we can departmentize a line of merchandise in our stores, it goes much faster than if it is mixed in with other unrelated items. This year we are departmentizing moth preventive products,—by using a compact floor display stand as shown." This sage merchandising comment by an expert in the field, R. C. Partington of the United Cigar-Whalen Stores. The rack supplied by Merck & Co., makers of "Di-chloricide."

Penick In Larger Quarters

Executive offices of S. B. Penick & Co., New York, insecticide raw materials, which have been located for the past few years at 132 Nassau St., have just been moved to 50 Church St. The new location takes up most of the sixteenth floor.

Du-Rite Takes Over Dethol Co.

Du-Rite Chemical Co., Brentwood, Maryland, recently took over the production and sales management of Dethol Manufacturing Co., also of Brentwood, and the new company has been named Du-Rite Manufacturing Co. Douglas Lawrence, head of the Du-Rite firm, is president of the new company, with Earl R. Ament, vice-president in charge of sales.

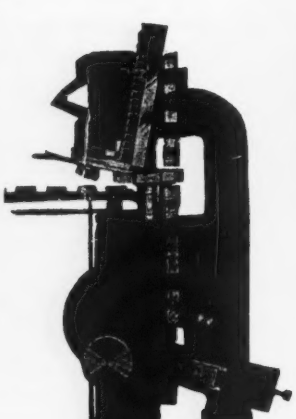
Phila. P.C.O.'s Meet

A dinner meeting of the Philadelphia Pest Control Operators was held at the Hotel Normandie on April 4th. William O. Buettner, secretary of the national association, spoke on association activities. Discussion included participation in the seventh annual convention of the American Public Health Association at Atlantic City, N. J., scheduled for the week of October 14; the Wages and Hours law; and classified telephone directory advertising.

Exterminators Hear Mills

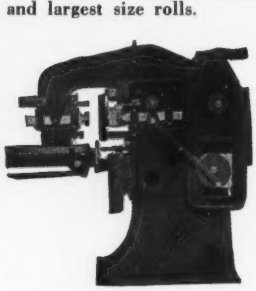
Ernest M. Mills, of the Division of Predator and Rodent Control, U. S. Department of the Interior, spoke on rat control before the April 7th meeting of the Professional Exterminators Association of New York at the Hotel Commodore, New York. The next meeting of the association is scheduled for May 12 on the subject—mosquito and fly control. Photo below shows Mr. Mills addressing April meeting.

Special Offerings of **SOAP MACHINERY** *Completely Rebuilt!*

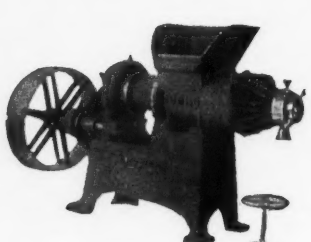


Small size fully automatic Jones toilet soap press. Capacity 150 to 200 small cakes per minute. A real buy at an attractively low price. Has been completely rebuilt in our own shops.

H-A SOAP MILL
This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls.



4 JONES AUTOMATIC combination laundry and toilet soap presses. All complete and in perfect condition.



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally **guaranteed.**

2 Automatic Power Soap Cutting Tables.

INVESTIGATE THESE SPECIAL BARGAINS

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Johnson Automatic Soap Chip Filling, Weighing and Sealing Machines for 2 lb. and 5 lb. Packages guaranteed in perfect condition.

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ADDITIONAL REBUILT SOAP MACHINERY

All used equipment rebuilt in our own shops and guaranteed first class condition.

- H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.
- Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.
- Ralston Automatic Soap Presses.
- Scouring Soap Presses.
- Empire State, Dopp & Crosby Foot Presses.
- 2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.
- H-A 4 and 5 roll Steel Mills.
- H-A Automatic and Hand-Power slabbers.
- Proctor & Schwartz Bar Soap Dryers.
- Blanchard No. 10-A and No. 14 Soap Powder Mills.
- J. H. Day Jaw Soap Crusher.
- H-A 6, 8 and 10 inch Single Screw Plodders.
- Allbright-Nell 10 inch Plodders.
- Filling and Weighing Machine for Flakes, Powders, etc.
- Steel Soap frames, all sizes.
- Steam Jacketed Soap Remelters.
- Automatic Soap Wrapping Machines.
- Glycerin Evaporators, Pumps.
- Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.
- Perrin 18 inch Filter Press with Jacketed Plates.
- Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.
- Day Grinding and Sifting Machinery.
- Schultz-O'Neill Mills.
- Day Pony Mixers.
- Gardiner Sifter and Mixer.
- Proctor & Schwartz large roll Soap Chip Dryers complete.
- Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.
- Day Talcum Powder Mixers.
- All types and sizes—Tanks and Kettles.
- Ralston and H-A Automatic Cutting Tables.
- Soap Dies for Foot and Automatic Presses.
- Broughton Soap Powder Mixers.
- Williams Crutcher and Pulverizer.
- National Filling and Weighing Machines.

Send us a list of your surplus equipment— we buy separate units or complete plants.

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Our Forty Years Soap Experience Can Help Solve Your Problems

CLASSIFIED ADVERTISING

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Positions Wanted

Young man, 38 years old, Christian and now employed, seeks a change. He has had 10 years' experience on the inside, in the agricultural insecticide field, including the manufacture of pyrethrum and rotenone resins, also supervision of the office routine. Married, has a car and willing to travel. Address reply to Box No. 129, care of *Soap*.

Soapmaker & Chemist—man with long experience as superintendent in factories making all kinds of soaps, recovery of glycerine, etc. Also know rendering business. Address Box No. 131, care *Soap*.

Soap Expert—American with many years' experience, recently returned from South America; available to teach soap manufacture, oil refining,—all types soap,—break in younger men, install processes, etc. Best record and references. Address Box No. 128, care *Soap*.

Superintendent—Can make all kinds of soap, analyze and reproduce anything in soap line; also recovery of glycerine, and know rendering business. Address Box No. 108, care *Soap*.

Chemical Engineer with sixteen years experience as chief chemist in soap and glycerine factory desires position as superintendent. Now employed. Address Box No. 132, care of *Soap*.

Perfumer—Man with experience in Europe and U. S. and specialist in compounds, and with following in the trade, desires new connection with perfume materials house where he may exploit present contacts. Address Box No. 124, care *Soap*.

Soap Engineer—Native American, age 27. B.S. in Chemical Engineering, Armour Institute of Technology. Four years thorough basic training in control, research, development with large soap company. Seeking greater opportunities. Go anywhere. Address Box No. 119, care *Soap*.

As Never Before

YOU SAVE TIME
YOU SAVE MONEY
with CONSOLIDATED
Rebuilt Equipment

SELECTED SPECIALS

2—Pneumatic Scale Carton Packaging Units.
1—Sargent 54" x 72" single Chilling Roll.
2—Proctor & Schwartz Soap Chip Dryers, steel frame; 1 with single cooling roll.
1—Houchin Para Block Press, with sliding die.
3—Soap Foot Presses.
2—Jones Vertical Automatic Soap Presses.
1—Jones Horizontal Automatic Soap Press.
3—Houchin Plodders, 10", 8", 4"
1—Automatic Soap Wrapping Machine.

Crutchers
Soap Kettles
Powder Mixers
Granite Mills
Plodders
Slabbers
Foot and Automatic Soap Presses
Cutting Tables
Pulverizers
Soap Pumps
Soap Chippers
Filter Presses
Soap Frames
Powder Fillers
Labellers
Tanks
Boilers

Send for New Illustrated Circular
Serving Industry for 24 Years

CONSOLIDATED PRODUCTS CO., INC.
15-21 PARK ROW
BArclay 7-0600
NEW YORK, N. Y.
Cable Address: Equipment
We buy your idle Machinery—Send us a list.

TETRA SODIUM PYRO PHOSPHATE

Crystalline-Anhydrous

Alkalies
Paradichlor benzene
Carbon Tetrachloride
Tri Sodium Phosphate

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We are in a favorable position to work with you on your requirements for these and other chemicals used in the manufacture of soaps, detergents and sanitary products. Why not check with us?

•

JOHN A. CHEW, INC.
60 East 42nd Street New York
Phone: MUrray Hill 2-0993

CRESYLIC ACID

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HIGH BOILING
TAR ACIDS

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TAR ACID
CREOSOTE OIL

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NAPHTHALENE

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MIRVALE CHEMICAL CO., Ltd.
MIRFIELD YORKS, ENG.

"Steamaster"
INSECTICIDE SPRAYER

With steam serving both as an ingredient and as a force, the insecticide itself is held in moist suspension and the attack is made at full strength . . . thus guaranteeing a 100% thorough job of pest extermination. Completely enclosed heating element. Operates from any electric outlet. No fire hazard. Current shuts off automatically when water level drops below the level of the heating element.

A. C. ONLY

Write Today for Complete Details, Prices and Descriptive Literature.

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351 Atlantic Avenue Brooklyn, N. Y.
Manufacturers to the Wholesale Trade Only

We announce development of new type soap colors

PYLAKLORS

They have good fastness to alkali, light, tin, ageing.

The following shades are already available:

Bright Green	Dark Brown
Olive Green	Palm Green
Yellow	Golden Brown
True Blue	Violet

It will pay you to send for testing samples.

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Cable Address: "Pylamco"

Direct Subway Entrance to all Points of Interest

New York's Popular
HOTEL
LINCOLN
44TH TO 45TH STS. AT 8TH AVE.

OUR CHOICEST ROOMS From $3
1400 ROOMS each with Bath, Servidor, and Radio.
★ Four fine restaurants awarded Grand Prix 1940 Culinary Art Exhibition.

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PRESIDENT
John L. Horgan
Gen. Mgr.
HOTEL EDISON
SAME OWNERSHIP

IN THE CENTER OF MID-TOWN NEW YORK

Positions Open

Salesmen to sell soaps, cleaning compounds, waxes, polishes, etc. Write giving experiences. Renu Products, Inc., Whitestone, Long Island.

Southern manufacturer of soap powders, washing powders, scouring powders wants superintendent not subject to draft who is competent soap boiler. Give full details, experience, references, ideas as to salary. Address Box No. 133, care *Soap.*

Soap Assistant—Wanted, a young man with a few years experience in soap plant for position with manufacturer near New York. Give age, experience, salary wanted, education, and other details. Good opportunity for right man. Address Box No. 116, care of *Soap.*

Responsible company wants salesmen to sell gift line with military emblems and other specialties to Post Exchanges in Army Camps. Products now selling in several camps. Liberal commissions Part time satisfactory. State full experiences, territory covered, references, also present lines. Address Rm. 201—628 Sycamore St., Cincinnati, O.

Salesman: experienced of proven ability only, with car for local trade by manufacturer sanitary chemicals carrying full line janitors' supplies, near Philadelphia; real opportunity for right man with growing organization; drawing $40.00 per week against commission; describe fully personality and qualifications. Address Box No. 130, care *Soap.*

Floor Waxes—Wanted by large established manufacturer a graduate chemist who has had several years experience in floor waxes and other floor materials. Give age, experience, and salary expected. Box No. 125, care *Soap.*

Miscellaneous

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A New Departure In Crutcher Performance

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HUBER MACHINE CO.

"Builders of Good Soap Machinery for the Past 45 Years"

265 46th STREET BROOKLYN, N. Y.

F. & S.

Quality Colors *for* TOILET SOAPS LIQUID SOAPS

TOILET PREPARATIONS

Long experience enables us to produce colors for all types of soaps.

If you have a shade you want matched send us a sample. We have complete facilities for matching.

Liquid soap colors a specialty—send for samples of F. & S. greens and ambers.

FEZANDIE & SPERRLE, Inc.

205 FULTON STREET
NEW YORK, N. Y.

Import—Manufacture—Export

108

"Good" Products at "Good" Prices

Manufactured by us under careful laboratory control.

DISINFECTANTS

Pine Oil
Coal Tar (Coef. 2 to 20)
Cresol Comp. U.S.P.
Cresylic

POTASH SOAPS

Liquid Soaps (up to 40%)
Soap Bases
Vegetable Oil Soaps (Paste and Liquid)
Pine Scrub Soaps (Liquid and Jelly)
Sassafrassy Scrub Soap
Soft Soap, U.S.P.
Auto Soap
Saddle Soap

SPECIALTIES

Self Polishing Wax (Up to 20% solids)
Buffing Floor Waxes (Liquid and Paste)
Liquid Metal Polish
Liquid Furniture Polish
Insecticide Sprays
Weed Killer (Liquid)
Fire Extinguishing Liquid
Soda and Acid Recharges
Drip Machine Fluid
Toilet Bowl Cleaner
Drain Pipe Cleaner
Roach Powder
Wax Base Cleaner
Coal Tar Animal Dip
Powdered Rosin

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Manufacturing Chemists—Since 1868
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and
DERRIS RESINS

Manufacturers of finished insecticides have come, over a period of years, to look to DERRIS, INC. as headquarters for rotenone and derris products of all types. We are specialists in this field and are prepared to supply specifically compounded products made up according to each customer's varying needs.

Timbo Powder — Derris Powder
of Finest Grind

DERRIS, Inc.

79 WALL STREET NEW YORK, N. Y.

Calling WYOMING!

What is the matter with the Wyoming soap and sanitary chemical industry, our circulation manager wants to know. SOAP & SANITARY CHEMICALS has subscribers in 47 states, but Wyoming is still among the missing. Besides thoroughly covering the U. S. A. we do a fair job abroad. Subscribers numbering 552 in 56 foreign countries bear witness to the international influence of this publication. Annual subscription $3 domestic, $4 foreign.

Will Purchase Immediately—Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 134, care *Soap*.

For Sale: 10 ton chunk soap. Pneumatic chip filler. 1 Kitchem cleanser equipment, mixer, filler and sealer. Kettles, cyclone system. Savage Mfg. Co., Phoenix, N. Y.

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

FOR SALE: 2 Garrigue Single Effect Glycerine Evaporators; P & S Soap Chip Dryer; 8" Soap Plodder; 30—1200 lb. Soap Frames; Crutchers, Slabbers, Kettles, Cutting Tables, etc. "We buy single items to complete plants." BRILL EQUIPMENT CORPORATION, 193 Varick Street, New York City.

Wanted: Used portable gluer for gluing tops and bottoms of folding paper boxes, also small filler for powdered soap. Address Box No. 135, care *Soap*.

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Brings excellent results at a minimum cost. Rates are only 10c per word with a minimum charge of $2 per issue (position wanted advertisements accepted at half rates). Whether you have some surplus equipment or material for sale, have a position open or are looking for a new connection, etc., use space in the Classified Section of *Soap*. It will place you in touch with the entire soap and sanitary chemical industry.

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for

Toilet Soaps **Shampoos**
Liquid Soaps **Lotions**
Para Blocks **Hand Soaps**
Shave Creams **Sweep Compounds**
and other Chemical Specialties

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Nu-Crown is a 60-65% soap. Lathers fast and heavy. Cleans thoroughly — rinses easily. **Flo-Crown,** a 75-80% soap, is recommended for use in making lower percentage soaps only. A semi-fluid base made easy to handle and easy to use.

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NEW YORK . . . . KANSAS CITY

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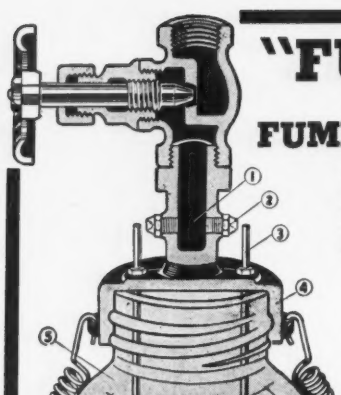

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(1) Operated by factory steam or air pressure—also by portable compressors or CO-2 gas. (2) Four pressure nozzles which account for Fumeral's well-known efficiency and economy. (3) Removable liquid tubes, easy to clean and to adjust. (4) Solid bronze casting of simple construction—safety screw thread—needle valve. (5) No pressure applied to the one quart or half gallon standard jar. Pat. 1934-1938.

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FUMERAL COMPANY — RACINE, WIS.

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Our Manila Gums are now widely used in *liquid floor waxes.* Have you tried them in your products? Write us for details.

Also a full line of other spirit and oil soluble Natural Resins.

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(NEAR WEST STREET)
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ACIDLESS TALLOW OIL

Prompt Delivery—Drums, Barrels, or Tank Cars.

INDEPENDENT MANUFACTURING CO.
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202 Common Household Pests of North America

by Hugo Hartnack

Just fresh from the press is this new text,—invaluable to the manufacturer of insecticides and the exterminator, dealing with common household insect pests. The contents total 352 pages, with some 300 illustrations.

$3.75 Per Copy
Send Check with Order to

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NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 129, for page numbers. *"Say you saw it in SOAP."*

ALKALIES

John A. Chew, Inc.
Columbia Chemical Div., Pittsburgh Plate Glass Co.
Diamond Alkali Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Michigan Alkali Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

BULK AND PRIVATE BRAND PRODUCTS

Ampion Corporation (Soaps and Sanitary Chemicals)
Associated Chemists, Inc. (Insecticides)
Baird & McGuire, Inc. (Disinfectants)
Buckingham Wax Corp. (Wax Products)
Candy & Co. (Wax Products)
Chemical Supply Co. (Disinfectants, etc.)
Davies-Young Soap Co. (Soaps and Floor Wax)
Empire Chemical Products Co. (Wax Products)
Federal Varnish Co. (Wax Products)
Franklin Research Co. (Floor Products)
Fuld Bros. (Soaps and Sanitary Chemicals)
James Good, Inc. (Sanitary Chemicals)
R. M. Hollingshead Corp. (Soap and Sanitary Chemicals)
Hysan Products Co. (Sanitary Chemicals)
Koppers Co. (Disinfectants)
Kranich Soap Co. (Potash Soaps)
Pecks Products Co. (Soaps and Sanitary Chemicals)
Philadelphia Quartz Co. (Detergents)
Reilly Tar & Chem. Co. (Floor Seals)
Sweeping Compound Mfrs. Co. (Sweeping Compound)
Trojan Prods. Mfg. Co. (Rug and Upholstery Specialties)
Uncle Sam Chemical Co. (Sanitary Chemicals)
T. F. Washburn Co. (Wax Products)
White Tar Co. (Disinfectants, etc.)

CHEMICALS

American-British Chemical Supplies
Chemical Mfg. & Dist. Co.
John A. Chew, Inc.
Columbia Chemical Div., Pittsburgh Plate Glass Co.
Cowles Detergent Co.
Diamond Alkali Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
Hooker Electrochemical Co.
Industrial Chemical Sales Div.
Innis, Speiden & Co.
Michigan Alkali Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Reilly Tar & Chemical Corp.
Solvay Sales Corp.
Standard Silicate Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS
(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
Baird & McGuire, Inc.
Barrett Co.
Innis, Speiden & Co.
Koppers Co.
Mirvale Chemical Co.
Monsanto Chemical Co.
Pittsburgh Coal Carbonization Co.
Reilly Tar & Chemical Co.
White Tar Co.

COLORS

Fezandie & Sperrle
Interstate Color Co.
Pylam Products Co.
Tamms Silica Co.

CONTAINERS AND CLOSURES

American Can Co. (Tin and Fibre Cans, Steel Pails)
Anchor-Hocking Glass Corp. (Closures and Bottles)
Continental Can Co. (Tin Cans)
Crown Can Co. (Tin Cans and Steel Pails)
National Can Co. (Tin Cans)
Williams Sealing Corp. (Closures)

DEODORIZING BLOCK HOLDERS

Fuld Bros.
Hysan Products Co.

INSECTICIDES, SYNTHETIC

Associated Chemists, Inc.
Dodge & Olcott Co.
John Powell & Co.
Rohm & Haas Co.
U. S. Industrial Chemicals, Inc.
Velsicol Corp.
Whitmire Research Corp.

MACHINERY

Anthony J. Fries (Soap Dies)
Blackmer Pump Co. (Pumps)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
R. A. Jones & Co. (Automatic Soap Presses and Cartoning Machinery)
Karl Kiefer Machine Co. (Filling Machinery)
Koppers Company (Coal Tar Plants, Power Plants, Valves, Castings, Pipe, Tanks)
J. M. Lehmann Co. (Soap Machinery)

NOTE: This is a classified list of the companies whichadvertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 129, for page numbers. *"Say you saw it in SOAP."*

MACHINERY, (Contd.)

Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Sprout, Waldron & Co. (Mixing, Conveying, etc.)
Stokes & Smith Co. (Packaging Machy.)

MACHINERY, USED

Consolidated Products Co.
Brill Equipment Corp.
Newman Tallow & Soap Machinery Co.

MISCELLANEOUS

American Standard Mfg. Co. (Wax Applicator and Mops)
Anchor-Hocking Glass Corp. (Metal Caps)
Crosby Naval Stores, Inc. (Pine Oil and Rosin)
Dow Chemical Co. (Germicides, Agricultural Insecticides, Fumigants)
Filtrol Corp. (Purifying and Decolorizing Clay)
Industrial Chemical Sales Div. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants)
Koppers Company (Coal, Coke, Roofing Materials)
Pennsylvania Refining Co. (White Oils)
Pylam Products Co. (Lathering Agent)
Reilly Tar & Chem. Co. (Preservatives)
Victoria Paper Mills Co. (Toilet Tissues)

OILS, FATS, AND FATTY ACIDS

Eastern Industries
Emery Industries, Inc.
Independent Manufacturing Co.
Industrial Chemical Sales Div.
Newman Tallow & Soap Machinery Co.
Orbis Products Corp. (Stearic Acid)
Welch, Holme & Clark Co.

PARADICHLORBENZENE

John A. Chew, Inc.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING MATERIALS

American-British Chemical Supplies
Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer Inc.
E. I. Du Pont de Nemours & Co.
Felton Chemical Corp.
Firmenich & Co.
Fritzsche Brothers, Inc.
General Drug Co.
Givaudan-Delawanna, Inc.
Geo. Lueders & Co.
Magnus, Mabee & Reynard, Inc.
Monsanto Chemical Co.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
John Powell & Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.
Albert Verley, Inc.

PETROLEUM PRODUCTS

Deodorized Insecticide Base, White Oils, Petrolatum, Paraffine Oils, Residues, etc.)

Atlantic Refining Co.
Pennsylvania Refining Co.
L. Sonneborn Sons, Inc.

PHOSPHATES

Trisodium, Sodium Pyrophosphate, etc.)

John A. Chew, Inc.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Monsanto Chemical Works
Victor Chemical Works
Warner Chemical Co.

PYRETHRUM AND ROTENONE PRODUCTS

Insect Flowers and Powder, Pyrethrum Extract, Derris Products)

Associated Chemists, Inc.
Derris, Inc.
Dodge & Olcott Co.
Hammond Paint & Chem. Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
S. B. Penick & Co.
John Powell & Co.
R. J. Prentiss & Co.

SILICATES

Cowles Detergent Co.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SOAP DISPENSERS

Ampion Corp.
Bobrick Mfg. Co.
Fuld Bros.

SPRAYERS

Breuer Electric Mfg. Co. (Electric)
Dula Mfg. Co. (Steam Sprayers)
Fumeral Co. (Pressure Sprayers. Steam, Air, CO_2 gas)

WAXES AND GUMS

Carnauba, Shellac, Candelilla, etc.)

O. G. Innes Corp.
Innis, Speiden & Co.
The Mac Lac Co. (Shellac)
Mantrose Corp. (Shellac)

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SKINNER & SHERMAN, INC.
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Bacteriologists and Chemists
Disinfectants tested for Phenol Coefficient. Toxicity Index determined by chick embryo method of Salle. Antiseptics tested by agar cup plate and other standard methods.
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STILLWELL AND GLADDING, Inc.
Analytical and Consulting Chemists
Members Association of
Consulting Chemists and Chemical Engineers
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KILLING
strength of Insecticides
by PEET GRADY METHOD
PYRETHRINS in PYRETHRUM FLOWERS
(by Gnadinger or Seil Method)
We raised and killed more than 1 million flies in the last 2 years
ILLINOIS CHEMICAL LABORATORIES, INC.
GRIDLEY, ILLINOIS

FOSTER D. SNELL, INC.
Our staff of chemists, engineers and bacteriologists with laboratories for analysis, research, physical testing and bacteriology are prepared to render you *Every Form of Chemical Service*
313 Washington Street Brooklyn, N. Y.

ALAN PORTER LEE, Inc.
Contracting and Consulting Engineers
Design and Construction of Equipment and Plants for Producing and Processing Fats, Oils, Soaps and Related Products
136 LIBERTY STREET, NEW YORK, N. Y.
Cable Address: "ALPORTLE", New York

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Analytical and Consulting Chemists
Specialists in the Analysis of Organic Insecticides, Pyrethrum Flowers, Derris Root, Barbasco, or Cube Root—Their Concentrates and Finished Preparations
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offering their services to manufacturers of soaps and sanitary specialties should apprise the industry of their facilities through this professional card department. SOAP reaches 4,000 firms needing help of a professional nature.

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Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorneys' Fees"—Free
Lancaster, Allwine & Rommel
PATENT LAW OFFICES
Suite 402, Bowen Building Washington, D. C.

Refer To Your 1941
BLUE BOOK
for F.D.A. Method for Testing of Disinfectants and Antiseptics.
Official N.A.I.D.M. Method for Testing and Grading of Insecticides.
Free with a $3.00 subscription to SOAP.
$4.00 Foreign
MAC NAIR-DORLAND CO.
Publishers
254 W. 31st Street New York, N. Y.

...1941 Official Test Insecticide

SUPPLIES of the new 1941 Official Test Insecticide for use in testing fly sprays by the official Peet-Grady Method will be available for distribution on and after May 20. All official testing on and after June 1, 1941 must be made with the new 1941 O.T.I. The 1940 O.T.I. becomes invalid after that date. The new 1941 O.T.I. will remain official for one year until June 1, 1942.

To all testing laboratories, whether members of this Association or not, it is suggested that orders for such shipments of 1941 O.T.I. as may be required for prompt use, be sent to this office **now** so that there will be no delay in delivery. The 1941 O.T.I. is priced at $5.00 per dozen 6 oz. bottles, plus $1.00 per dozen service charge for non-members of this Association. Check with order is required. For further information, write to

▼

National Association of Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street New York

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DR. E. G. KLARMANN
Lehn & Fink Prods. Corp., Bloomfield, N. J.
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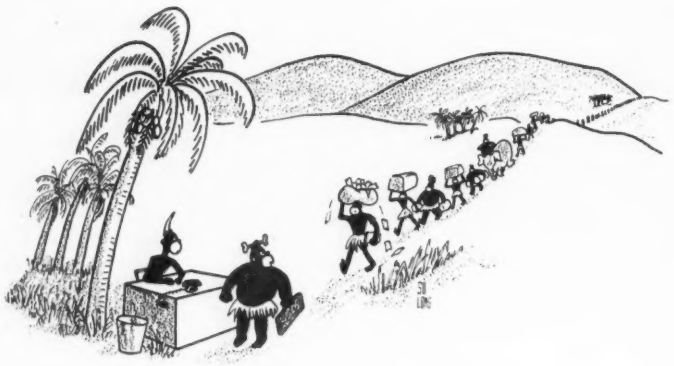

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. . . flashy advertising!

ONE swallow does not make a summer,—neither does one flashy advertisement constitute an advertising program. Experience proves that the advertising in trade papers which pays the best dividends in the long run is the kind that bangs away, month after month, year after year,—not the flashy one-shot kind.

Accordingly, if you want to increase your business in the field of soap products, chemical specialties, sanitary and janitor supplies, we suggest that you give some thought to regular advertising in

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Member Audit Bureau of Circulations

Tale Ends

HAVE you been indicted lately? If not, we fear that you should feel slighted,—for the list of recent indictments, mostly for supposed violation of the Sherman Act and others, reads like a "Who's Who in American Industry."

* * *

Olive oil, — authoritative reports say that there are not a thousand drums of denatured oil for soap available in the whole country. And, the price,—today about three or four times normal average. Where, oh where, are we going to get olive oil when this is gone?

* * *

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* * *

Did you receive your copy of the big, new 1941 *Blue Book?* If you are a paid subscriber, you did. Keep it handy and use it, for it contains a wealth of valuable information referred to almost daily.

* * *

The only place where the official Peet-Grady Method for testing household fly sprays is published in full and in latest form,—along with insecticide and other specifications, the new 1941 *Blue Book.*

* * *

Were your oil and fat tanks full when prices took it on the rise a short time back? They were if you followed the advice which we have been preaching for the last six or eight months.

* * *

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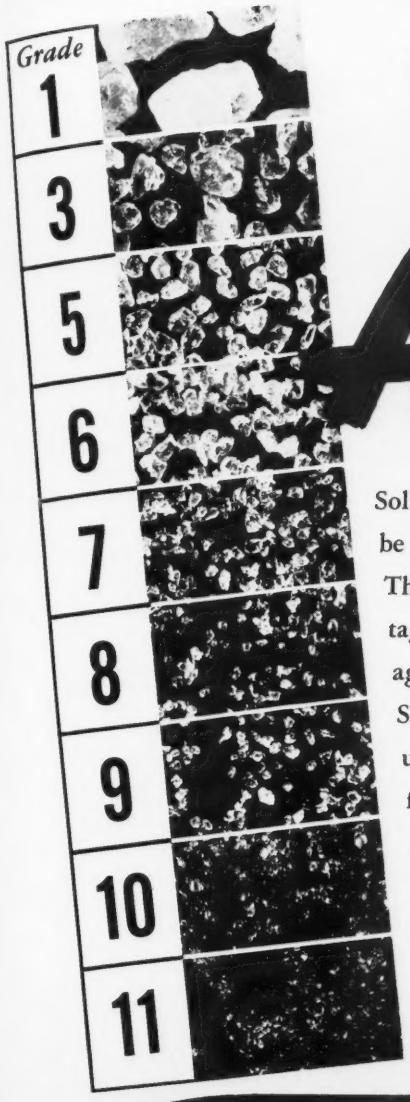

To Your Advantage

Solvay maintains *in stock* the many crystal sizes of Solvay Para-dichlorobenzene you see here. No waiting for them to be made up. They're ready for shipment today!

These crystal sizes are to *your* advantage. They give you the advantage of utilizing the size best suited to your own transparent packaging or to the size best suited to your blocking requirements.

Solvay Para-dichlorobenzene is noted throughout the trade for its uniform crystal size and the clearness of its crystals. Besides these factors YOU HAVE THE ADVANTAGE OF SOLVAY SERVICE . . . both Technical Service and the routine handling of your orders. Fill in the coupon now for prices and a sample of the grade size you are interested in.

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SOLVAY SALES CORPORATION, 40 Rector Street, New York, N. Y.

Gentlemen: Please send me a sample of the grade of Solvay Para-dichlorobenzene I have checked off, along with complete information.

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Company.....

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City..... *State*..... AJ-541

Methyl Salicylate Monsanto

Would a high quality, dependably uniform aromatic ingredient step up the sales appeal of *your* products?

Then here's an opportunity you can't afford to miss!

Methyl Salicylate Monsanto is available at an extremely favorable price, and stocks are ample to take care of all requirements.

Long known for its true wintergreen flavor and aroma, Methyl Salicylate Monsanto has established itself as the standard of quality and uniformity with a large and ever-growing number of users in a wide variety of products—from pharmaceuticals to insect sprays!

See for yourself how much Methyl Salicylate Monsanto can add to the sales appeal of *your* products. For a four-ounce sample and a quotation on your requirements, inquire: MONSANTO CHEMICAL COMPANY Organic Chemicals Division, St. Louis, U. S. A. District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Montreal.

Specifications
Methyl Salicylate Monsanto

Appearance: water-white liquid.

Odor: characteristic wintergreen, pure, sweet.

Specific gravity: (at 25°C.) 1.180 — 1.185.

Solubility in alcohol: 1.7 complete.

Heavy Metals: negative.

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SERVING INDUSTRY . . . WHICH SERVES MANKIND